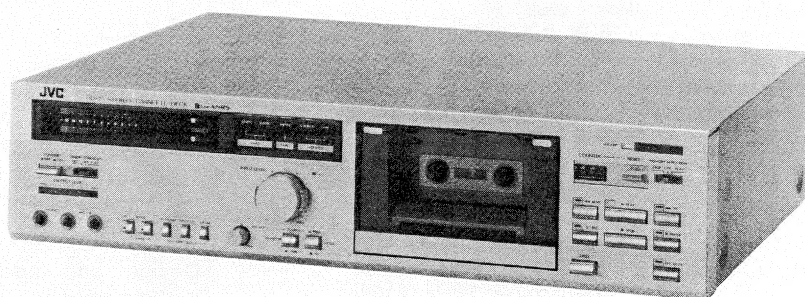


JVC

SERVICE MANUAL

MODEL
DD-7 A/B/C/E/J/U
STEREO CASSETTE DECK



No. 4195
January 1981

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Specifications

Type	: Component stereo cassette deck
Track system	: 4-track, 2-channel
Tape speed	: 1-7/8 inch/sec (4.8 cm/sec)
Frequency response	:
(OdB recording)	
Metal tape *1	: 25—12,500Hz \pm 3dB (Typical)
SA/Chrome tape *2	: 25—8,000Hz \pm 3dB (Typical)
SF/Normal tape *3	: 25—8,000Hz \pm 3dB (Typical)
(—20dB recording)	
Metal tape *1	: 15—2,000Hz (Nominal)
	: 25—18,000Hz \pm 3dB (Typical)
SA/Chrome tape *2	: 15—20,000Hz (Nominal)
	: 25—18,000Hz \pm 3dB (Typical)
SF/Normal tape *3	: 15—19,000Hz (Nominal)
	: 25—17,000Hz \pm 3dB (Typical)
Surpasses DIN 45 500.	
Note: *1 ... SCOTCH METAFINE or Equivalent	
*2 ... TDK SA or Equivalent	
*3 ... MAXELL UD or Equivalent	
S/N ratio	: 60dB (from peak level, weighted, Metal tape)
	The S/N is improved by 5dB at 1kHz and by 10dB above 5kHz with ANRS/DOLBY B on.
	(DIN 45 500 weighted)
Effect of Super ANRS	: (normal tape)
Improvement of S/N	: the same as with ANRS/DOLBY B
Improvement of frequency response:	
OdB recording	: 6dB at 10kHz
+ 5dB recording	: 12dB at 10kHz
Improvement of distortion:	
OdB recording	: 3% or less at 10kHz
+ 5dB recording	: 3% or less at 10kHz
Wow and flutter	: 0.021% (WRMS), (with JVC test tape)
	: 0.06% (DIN 45 500)
Crosstalk	: 65dB (1kHz)
Harmonic distortion	: K3; 0.4% THD; 1.0% (metal tape, 1kHz 0 VU)
Bias	: AC bias
Erase	: AC erasure
Heads	: 3 heads
	SEN ALLOY head for recording,
	SEN ALLOY X cut type for

Motors	: Quartz lock pulse servo DC motor (for Capstan)
	: DC motor (for Reel)
Fast forward time	: 85 sec or less with C-60 cassette
Rewind time	: 85 sec or less with C-60 cassette
Semiconductors	: 11 ICs, 78 transistors, 42 diodes, 13 LEDs, 2 Hall elements.
Input terminals	
Mic jack x 2	: Max. sensitivity; 0.2mV (—72dBs)
	: Matching impedance; 600 Ω — 10k Ω
Input jack x 2	: Min. input level; 80mV(—20dBs)
	: Input impedance; 100k Ω
Output terminals	
Output jack x 2	: Output level; 0—500mV
	: Output impedance; 5k Ω
Phones jack x 1	: Output level; 0—0.6 mW/8 Ω
	: Matching impedance; 8 Ω — 1k Ω
Power requirement	: AC 120V, 60Hz (DD-7C/J)
	: AC 240/220/120V, 50/60Hz (DD-7 A/B/E)
	: AC 240/220/120/100V, 50/60Hz (DD-7U)
Power consumption	: 30W
Dimensions	: 17-3/4" (450 mm) W
	: 4-3/8" (110 mm) H
	: 13" (330 mm) D
Weight	: 15.4 lbs (7.0 kg)

Design and specifications are subject to change without notice.

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Features

1. Two-motor full-logic mechanism with quartz-locked pulse-servo D.D. motor.
 - A quartz-locked pulse-servo D.D. motor newly developed for capstan drive and a DC motor for reel drive.
 - Low wow/flutter (WRMS 0.021%)
 - TIMER STANDBY mechanism (with maloperation protection)
 - AUTO-REWIND mechanism
 - Remote control terminal provided
2. Metal tape compatible
3. Three-head system permitting monitoring while recording is being made
 - X-cut SA (Sen-Alloy) combination record/playback head
 - 2-gap SA erase head
 - 3-position tape select switch
4. 2-color FL digital meter (PEAK/VU selectable) with peak hold function
5. DC configured record/playback amplifier
6. Recording equalization level (REC EQ) continuously variable
7. ANRS/DOLBY B and Super ANRS incorporated
8. Headphones in connection with slide system output level control
9. Record muting (REC MUTE) mechanism (with operation indicator LED)
10. New slim design with push button switches

Controls and Connections

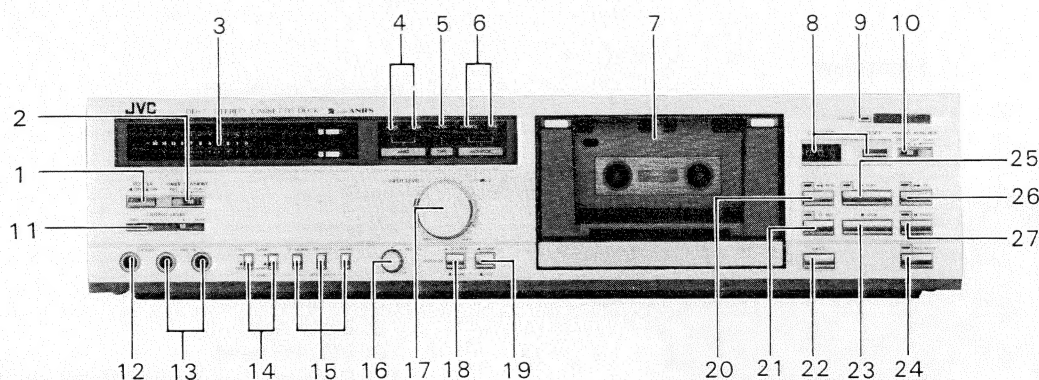


Fig. 1

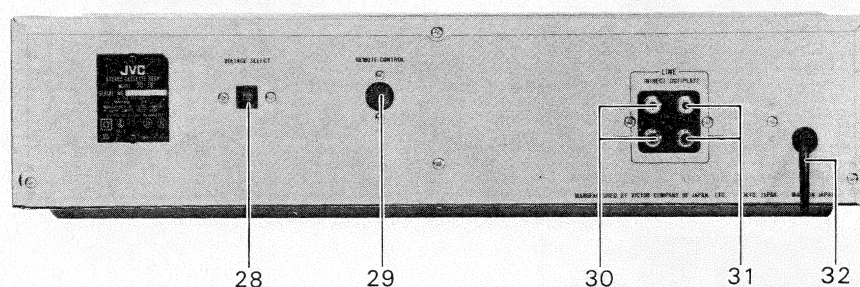


Fig. 2

- | | |
|---|--|
| 1. POWER switch | 17. INPUT LEVEL control |
| 2. TIMER STANDBY switch | 18. Monitor switch (TAPE, SOURCE) |
| 3. FL level indicator | 19. Meter select switch (PEAK, VU) |
| 4. ANRS indicator (SUPER, ANRS) | 20. REW (Rewind) button (◀) with indicator. |
| 5. METAL tape indicator | 21. REC (Record) button (○) with indicator |
| 6. Monitor indicator (SOURCE, TAPE) | 22. EJECT button |
| 7. Cassette holder | 23. STOP button |
| 8. Tape COUNTER/counter reset button | 24. REC MUTE button with indicator |
| 9. Quartz lock indicator (LOCKED) | 25. PLAY button (▶) with indicator |
| 10. AUTO REWIND switch | 26. FF (fast-forward) button (▶▶) with indicator |
| 11. OUTPUT LEVEL control | 27. PAUSE (■) button with indicator |
| 12. Headphone jack (PHONES) | 28. Voltage select switch (DD-7 B/E/U) |
| 13. Microphone jack (MIC) | 29. REMOTE CONTROL socket |
| 14. ANRS switch (ANRS/DOLBY B-OFF, SUPER-ANRS/DOLBY B) | 30. LINE IN (REC) terminals |
| 15. Tape select switch (SF/NORM, SA/CrO ₂ , METAL) | 31. LINE OUT (PLAY) terminals |
| 16. REC EQ control | 32. Power cord |

Main Parts Location

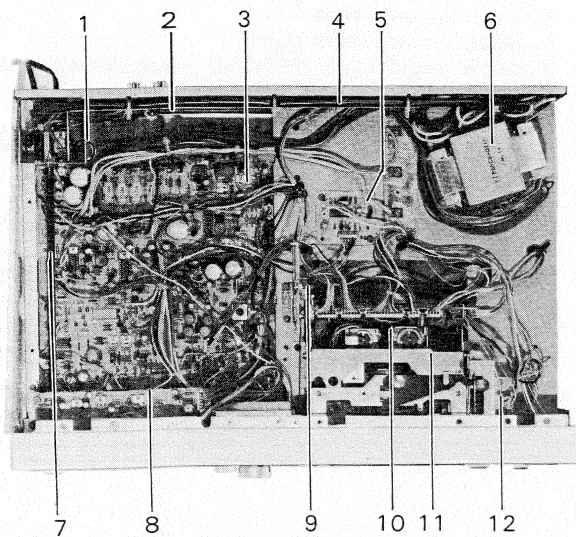


Fig. 3

1. Power switch P.W.B. ass'y
2. Pin jack ass'y
3. Main amp P.W.B. ass'y
4. Remote control socket
5. Connector P.W.B. ass'y
6. Power transformer
7. Remote bar for power switch
8. FL indicator ass'y
9. Gear-oiled damp brake
10. Mecha. control P.W.B. ass'y
11. Mecha. assembly
12. Hall IC P.W.B. ass'y

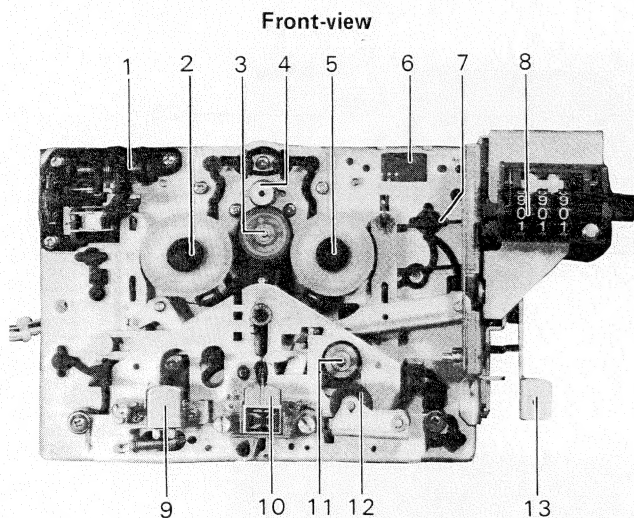


Fig. 4

(Mechanical Parts)

1. Switch holder (L)
2. Supply reel disc
3. Idler ass'y
4. Reel motor pulley
5. Take up reel disc
6. Switch holder (R)
7. Counter belt
8. Counter
9. Erase head
10. REC/PB head
11. Capstan (Direct drive Motor shaft)
12. Pinch roller ass'y
13. Eject lever
14. Mecha. Control P.W.B. ass'y
15. Brake solenoid
16. Reel motor
17. Play solenoid
18. Hall IC P.W.B. ass'y

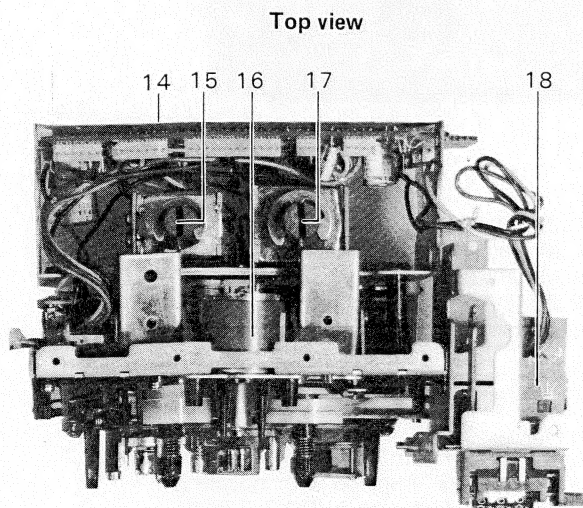


Fig. 5

Description on New Technology

■ Direct Drive (D.D.) Motor

1. Introduction

This motor is an opposed-plane no-commutator motor which incorporates an RPM detecting mechanism (FG) as shown in Fig. 6. The rotor consists of drive magnets and that combination of a Zn diecasting flywheel and FG magnets which enhances the effect of the flywheel.

The four pairs of drive magnets (8 poles), magnetically attached in one plane, and their opposed plane yoke form the magnetic circuit. Since the plane yoke is of slotless construction, motor torque unbalance (cogging) due to magnetic unbalance hardly occurs. In addition, the two Hall elements and four drive coils, supported by a PC board, are positioned between the drive magnets and the plane yoke as shown in Fig. 7.

The four drive coils are wound as a group of coils having 4 phases. To average the magnetic attractive and repulsive forces generated by coil current or to reduce the flux leakage due to coil current as much as possible, the two drive coils of the phase difference (phases 1-3 and 2-4) of 180° electrical angle are separately wound in parallel and at the same time the other two coils of the same phase are positioned at a mechanical angle of 135° .

The FG magnets of 204 poles are arranged magnetically precise in one place. The RPM signal output in proportion to the RPM is obtained by the detecting coil formed on the PC board etched at the same pitch as that of the poles of the FG magnets. At the same time, the detecting coil is placed around the overall circumference of the rotor to detect the RPM signal output as the full-circumference integration value to obtain a high-accuracy RPM signal output.

2. Operating principle

In state I shown in Fig. 8, when Hall element H1 is activated by rotor pole N1, transistor Tr-1 shown in Fig. 4 goes ON and then a coil current flows in drive coils W2 and W'2 in the direction shown in Fig. 3. By flow of the coil current, an N pole appears over W2 and an S pole over W'2. Thereby, the attractive and repulsive forces, both shown in this diagram, are produced, thus generating a torque in the direction shown in this diagram. The rotor rotates by this torque.

Next, when the rotor starts rotating to reach state II, Hall element H2 is activated by rotor pole N1. Thereby, transistor Tr-3 goes ON and a coil current flows in drive coils W3 and W'3. By flow of this coil current, an S pole appears over W3 and an N pole over W'3. Thereby, the attractive and repulsive forces are produced, thus generating a torque. The rotor rotates by this torque.

In states III and IV, motor torque is produced in the same manner as above. The rotor rotates by this torque. The rotor continues to rotate by repeating the process of I~IV. As the rotor moves only $1/4$ rotation in this process, four repetitions of this process provide one motor rotation.

Construction of D.D Motor

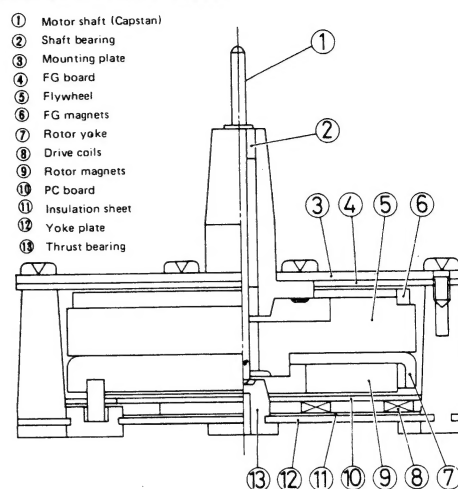


Fig. 6

Arrangement of Drive Coils and Hall Elements

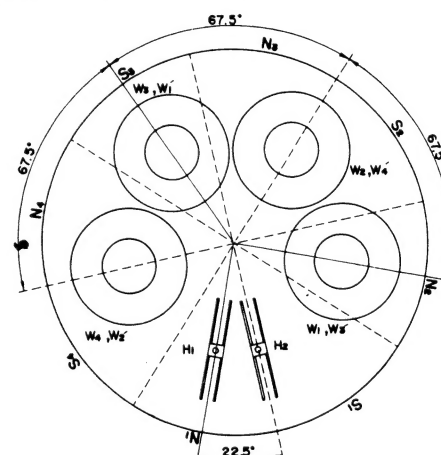


Fig. 7

Description of Motor Operation

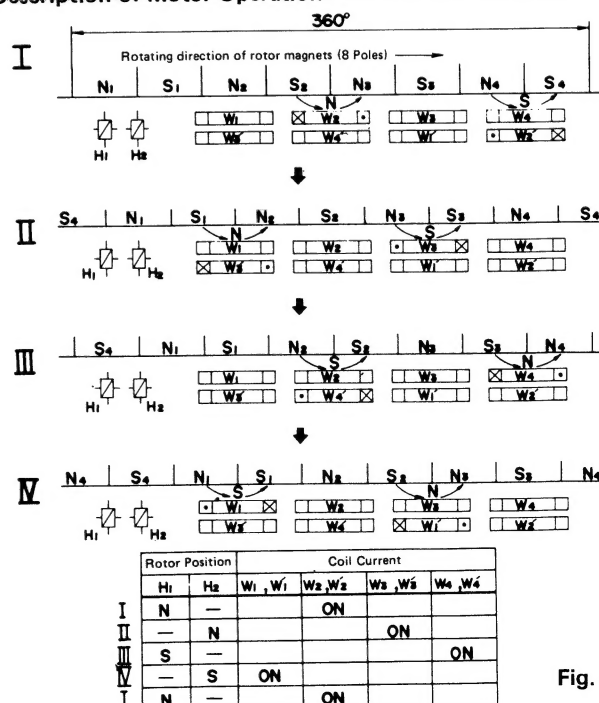


Fig. 8

Operating Principle of Phase Selector Circuit

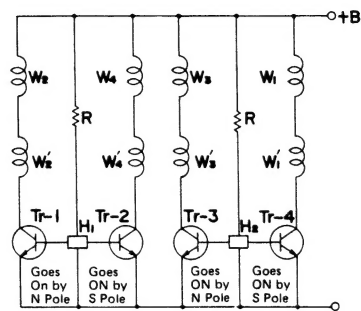


Fig. 9

Block Diagram for FG Control System

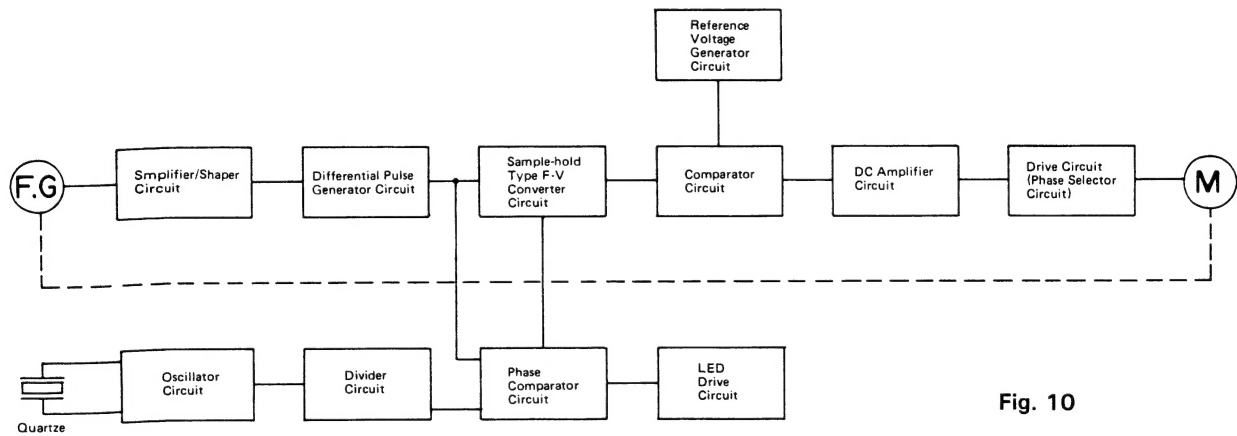


Fig. 10

Schematic Diagram of D.D Motor

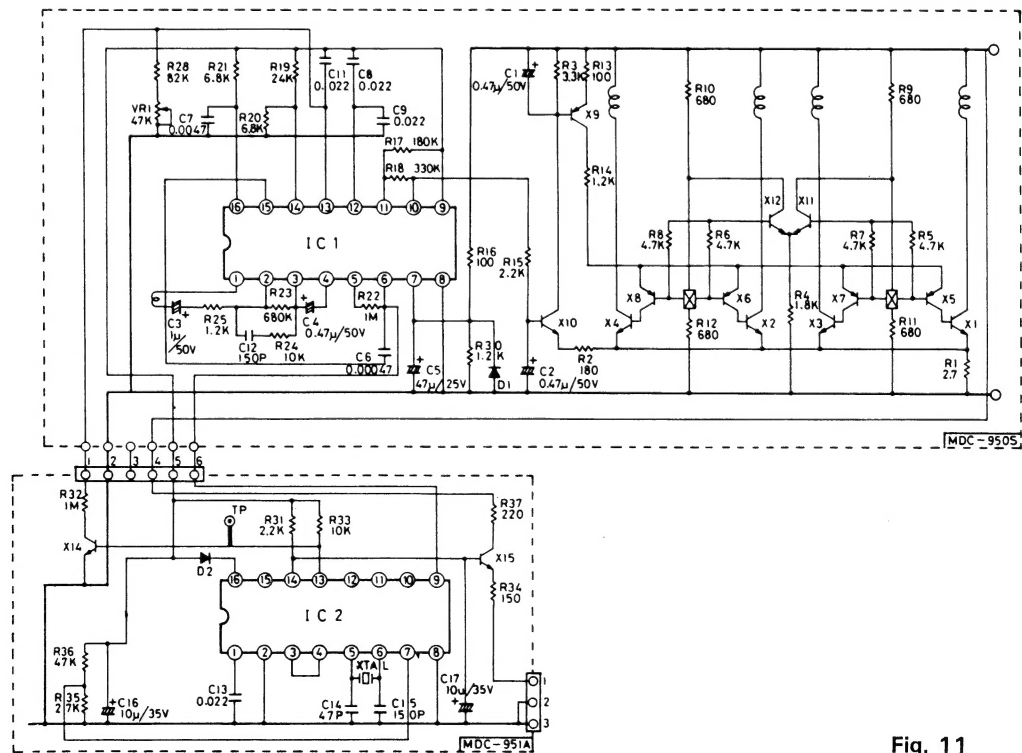


Fig. 11

3. Features

(1) High-precision FG

Stable servo system is assured by use of the full-circumference integration type high-precision FG in which 204 poles are magnetically attached.

(2) Low wow/flutter

No-cogging slotless construction, high-precision members, and stable servo system realize a wow/flutter of the order of WRMS 0.02%.

(3) Compactness

Slim design with full length of 27.2 mm.

Because the drive board is united with the motor, the motor operates by simply connecting it to a power supply.

(4) Stable operation

The rotor is attracted in one direction at all times because of slotless construction. Therefore, stable operation is obtained even when the set is laid on its side.

(5) Improved reliability

The mechanical contact sections are confined to the motor shaft and its bearing and coil current is switched in the solid state. Moreover, high-stability metal film resistors and high moisture-resistance polypropylene capacitors are employed. Therefore, reliability is sharply improved as compared with conventional brush motors.

(6) Stable servo system

The time constant of LPF is extremely small due to the sample-hold type F-V converter. Thereby, excellent response and operating characteristics are obtained.

(7) Low torque ripple

Hall elements with favorable property, auto-balancing circuit for automatically compensating for difference in characteristic between these elements are employed, with improved installation form of magnets. Thus, torque ripple is reduced.

(8) Newly developed motor control IC

The number of components are greatly reduced through employment of the motor control IC newly developed by JVC, thus permitting improved reliability with high compactness. Further, QL (quartz lock) control system is easily realized by the addition of QL unit.

(9) Newly developed QL circuit

The number of components are greatly reduced through employment of the QL circuit newly developed by JVC, thus permitting improved reliability with high compactness.

■ Two-solenoid mechanism with real-time pause function

Conventional electronic control mechanisms (KD-A6, -A8, -A7 and -A77) with real-time pause function are 3-solenoid types. The newly developed mechanism (DD-7) is capable of real-time pause function with 2 solenoids.

KD-A6 (3-solenoid type)

Brake solenoid	: Lifts the slide base up to the play position
Lock solenoid	: Locks the slide base located at the play position and at the same time releases brake.
Pause solenoid	: Releases the pinch roller from the capstan. (Pause mode)

DD-7 (2-solenoid type)

Play solenoid	: Lifts the slide base up to the play position and at the same time releases the pinch roller from the capstan.
Lock solenoid	: Locks the slide base located at the play position and at the same time releases brake.

• Operation

When the play solenoid goes ON, the slide base is lifted. At the same time, the pinch roller is released from the capstan through the other lever. Thus, the pause mode is reached at the moment of play. While the play solenoid is ON, the lock solenoid goes ON, thus releasing the brake and at the same time locking the slide base placed at the play position.

At this time, when the brake solenoid goes ON, the pinch roller being away from the capstan is released. The pinch roller is thereby brought into contact with the capstan and the play mode is reached for the first time. During play, the pause mode is reached when the pinch roller is released again from the capstan by turning ON the play solenoid.

Attracting direction of play solenoid and moving direction of slide base.

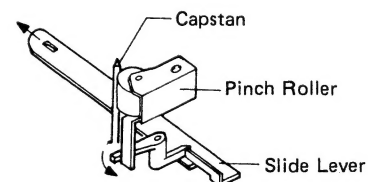


Fig. 12

■ FL level meter circuit

This meter circuit employs the time sharing system in which the level indication is switched from the Rch to the Lch according to the time. This system is called the duplex system or the dynamic drive system.

C702 in the diagram below has the time constant to determine the oscillation frequency of the oscillator for time sharing and oscillates at about 400 Hz.

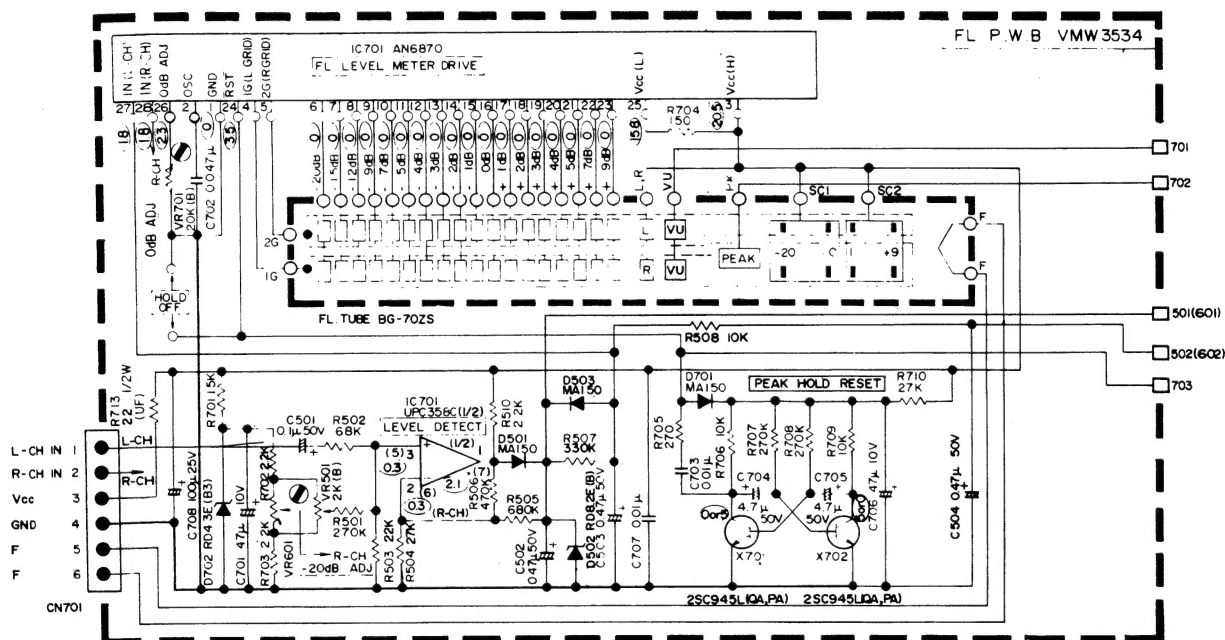
The input signals (+1.9V — +6.6V) both of which are made into DC at Pins 27 (Lch) and 28 (Rch) are applied to the IC. IC702, the AC-DC converter circuit, rectifies the audio signal input and produces a DC voltage in proportion to the input level.

- Attack time (When applying a signal equivalent to a signal of 5kHz, 0 dB)
10msec refers to 0 to -1dB.
3msec refers to -1 to -5dB.
- Recovery time (When removing a signal equivalent to a signal of 5kHz, 0dB)
300 ± 100msec until the indication of -6dB.

This circuit has the function to peak-hold all indication points except the three points (-20, -15 and -12dB). This circuit is automatically reset at regular intervals of 2 sec.

X701 and X702 in the diagram below form the astable multivibrator which generates the reset signal.

Schematic Diagram of FL Level Meter



Removal of the Main Parts

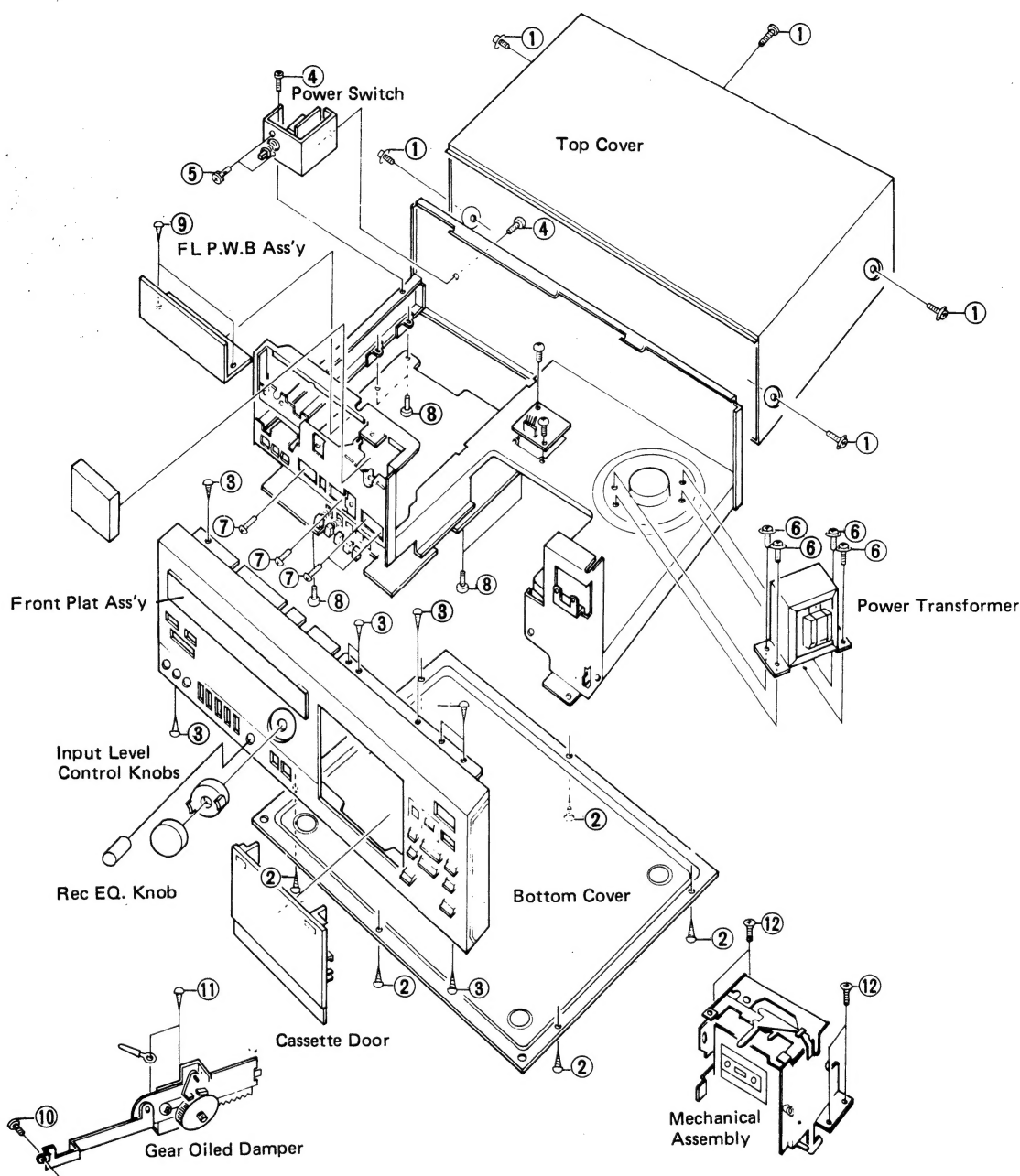


Fig. 14

Observe car in handing the parts since the parts are small in size and the distance between them are short due to a deck design aimed mainly at compactness and high performance.

Enclosure assembly parts

1. Cassette door

To open the cassette door, push on the eject button. Slide off the cassette door upwards (about 5 mm) to unlock its pawls of both sides. Remove the cassette door forward.

2. Control knobs

INPUT control knobs } Pull off them forward.
REC. EQ knob }

3. Top cover

Remove 5 screws ① fastening the top cover.

4. Bottom cover

Remove 8 screws ② fastening the bottom cover.

5. Front plate assembly

1) Remove 6 screws ③ fastening the front plate (upper side)

- enclosed 3 screws for Mechanical ass'y —
- 2) Remove 2 screws (3) fastening the front plate (bottom side)
- 3) Remove the wire socket for operation buttons wires on the mechanical control P.W. Board.
- 4) Remove the wire socket for quartz lock indicator (LED) on the quartz lock P.W. Board.
- 5) Remove each wire clamber, and Remove the front plate ass'y to forward.

Electrical Parts

1. Power switch
Remove 2 screws (4) fastening the switch bracket.
Remove 2 screws (5) fastening the power switch.
2. Power transformer
Remove 4 screws (6) fastening the power transformer.
3. Amp. P.W.B. assembly
Remove 4 screws (7) fastening the switch.
Remove 5 screws (8) fastening the amp. P.W.B. ass'y
4. FL P.W.B. assembly
Remove a connector on the FL. P.W. Board, and
Remove 2 screws (9).
Remove the FL P.W.B ass'y forward.

Mechanical assembly

1. Remove the bottom cover, and remove the heads wires from 2 wire clamps.
2. Remove a screw (10) fastening the arm of gear-oiled damper. (Left side of cassette holder.)
To remove the door brake relation parts, remove 2 screws (11) fastening the gear frame ass'y.
3. Remove 4 screws (12) fastening the mecha. bracket to amp. chassis. (left and right 2 screws on each)

Mechanical parts

1. Supply reel disc
Pull out the reel disc stopper (13). (when assembling the reel disc, the stopper use a new parts — the stopper cannot use again —)
2. Reel motor
1) Remove 3 screws (14) fastening the reel motor.
2) Remove a screw fastening the shift arm.
3. Take up reel disc
Pull out the reel disc stopper (15).
4. Erase head
Remove a screw (16).
Remove a screw (17) for adjustment
5. REC and PB head
Remove a screw (18).
Remove a screw (19) for adjustment.
6. Pinch roller arm assembly
Remove an E-ring (20).
7. Capstan motor assembly
1) Remove a screw (21) fastening the mecha. control P.W.B. assembly, and remove its assembly.
2) Remove a screw (22) fastening the earth wire. (with the shield bracket removed)
3) Remove 4 screws (23) fastening the solenoid.
4) Remove 4 screws (24) fastening the capstan motor assembly.

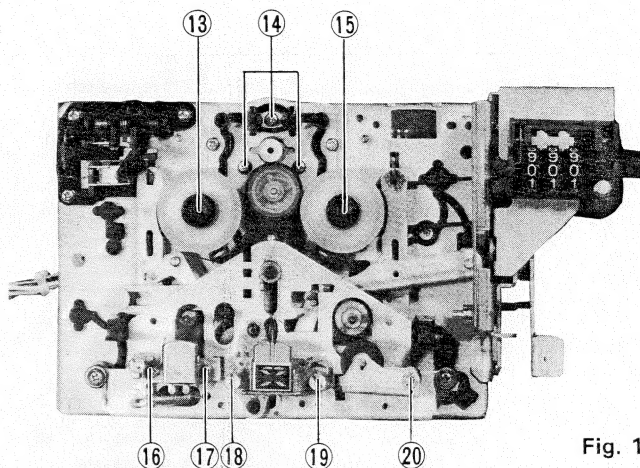


Fig. 15

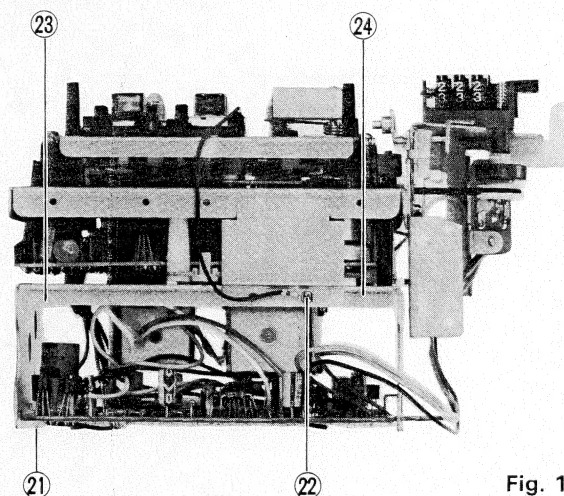


Fig. 16

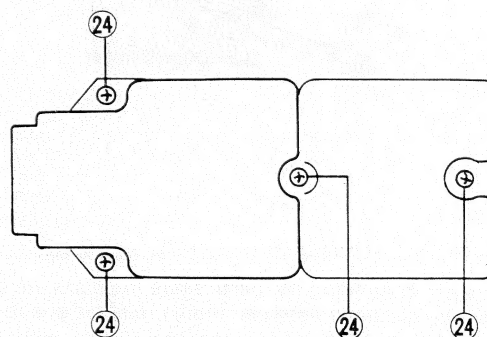


Fig. 17

Block Diagram

Main Amplifier Circuit

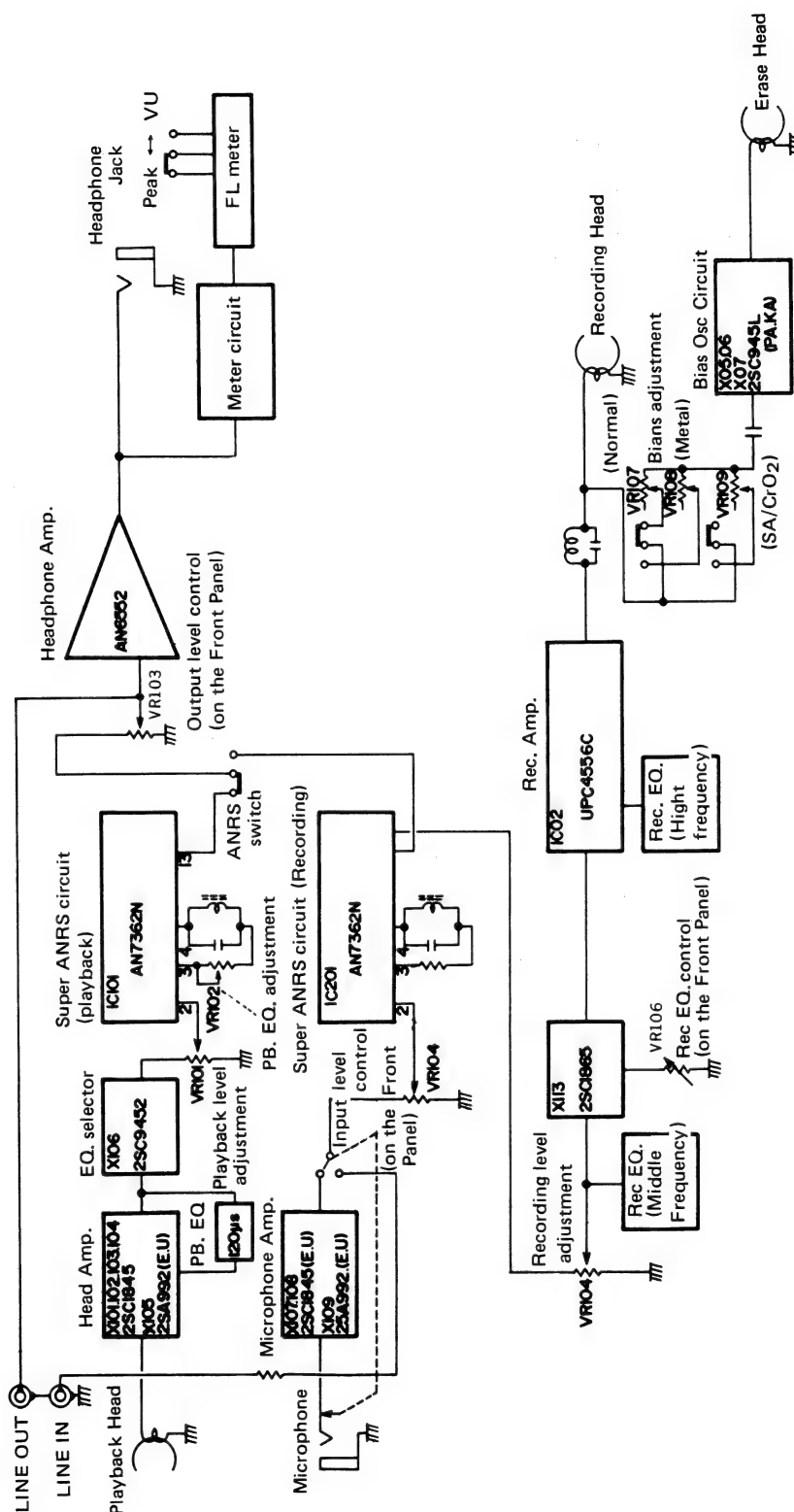


Fig. 18

Mecha. Control Circuit

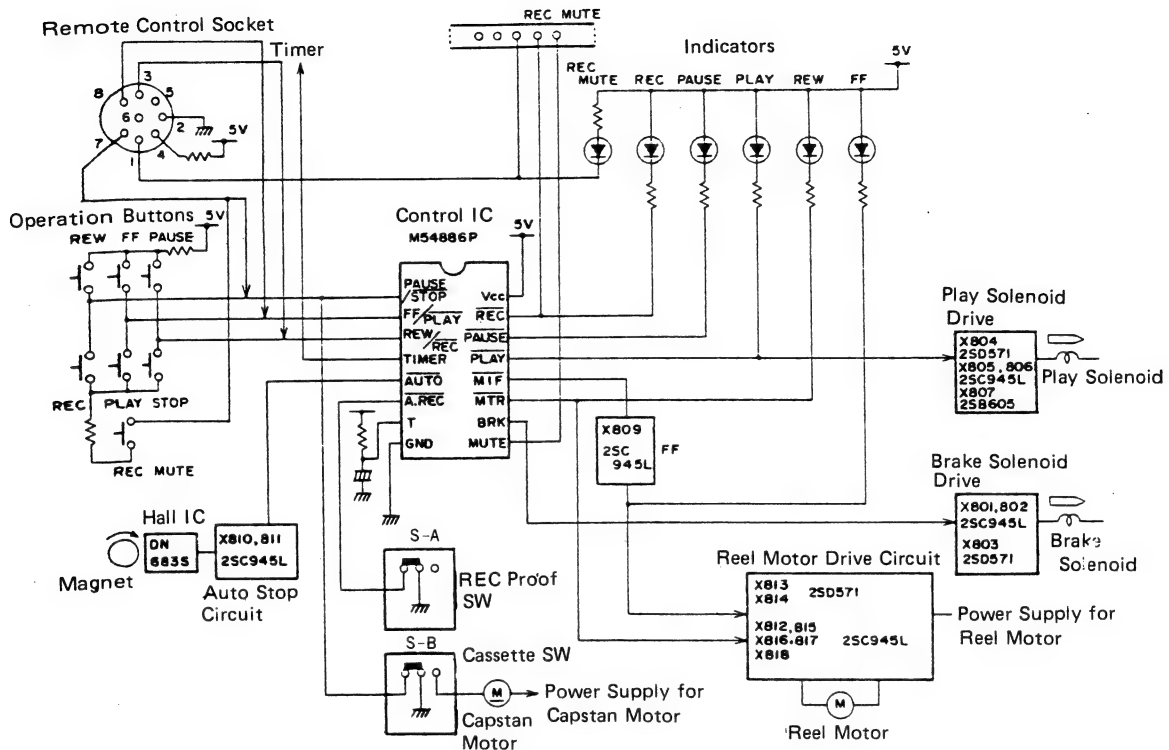


Fig. 19

Maintenance

To get long, trouble-free service, maintenance is important. Do not forget cleaning and demagnetizing.

Cleaning

After long use, the heads and tape part — capstan, pinch roller, etc. — will become dirty with dust or magnetic particles. Dirty heads cause imperfect erasing or high frequency drop-off. A dirty capstan and pinch roller will cause unstable tape speed, leading to increased wow and flutter. Always keep them clean by following the procedure below.

1. Heads.

- 1) Push Eject button to open the cassette holder.
- 2) Use the head cleaning stick-provided to wipe the surface where the tape comes into contact with the head.
(It is effective to moisten the cotton with alcohol.)

2. Pinch roller and capstan

Do the same method as heads.

3. Cabinet

When the cabinet becomes dirty, wipe it with a soft cloth soaked with a neutral cleaning solution of a polishing cloth.

* Do not use thinner or benzene.

Demagnetizing

The heads are made from a material resistant to magnetization, but after long use they may become magnetized. A magnet brought into their vicinity can magnetize the heads, causing excess noise. If noise seems to have increased, demagnetize the heads with a head demagnetizer through the following procedure.

1. Turn the POWER switch OFF.
2. Wrap the tip of the demagnetizer with vinyl tape or soft cloth so as not to damage the head surface. Switch on the demagnetizer and bring it close to the head.
3. Move the tip of the demagnetizer slowly first to the left and right, then up and down in front of the head. Gradually move it away from the head and switch it off at a distance of more than 30 cm (12").
4. The erase head need not be demagnetized. The capstan shaft and tape guide should be demagnetized in the same way as the record/playback head.

* Do not bring a magnetized metallic object (a screwdriver, for example) near the head as this will increase noise.

Main Adjustments

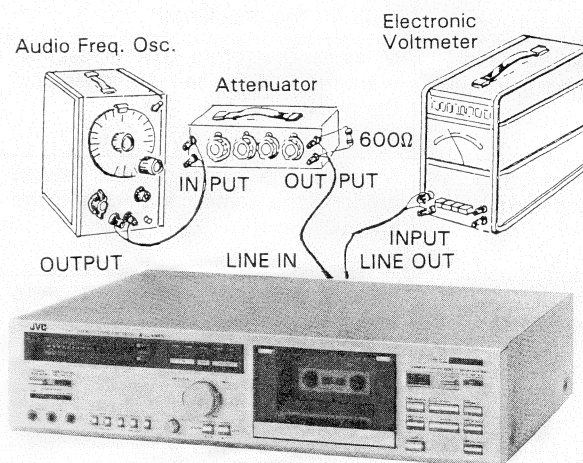
[I] Equipment and measuring instruments used for adjustment

1. Electrical adjustment

- 1) Electronic voltmeter
- 2) Audio frequency oscillator
(range: 50—20kHz and output 0dB with impedance 600Ω)
- 3) Attenuator
- 4) Standard tapes for REC/PB
Maxell UD—SF tape
TDK SA—SA tape
SCOTCH METAFINE—Metal tape } or equivalent
- 5) Reference tape for playback (JVC Test Tape)
VTT-658 (for head azimuth adj.)
VTT-656A-S (for motor speed, wow flutter adj.)
VTT-664 (for Reference Level 1kHz)
VTT-675N (for playback frequency response)
- 6) Resistor
600Ω (for attenuator matching)

2. Mechanical adjustment

- 1) Torque testing cassette gauge
- 2) Blank tape (C-120) for tape running checker.



DD-7

Fig. 20

[II] Mechanical adjustment (Adjust the mechanism or confirm that it is in normal operating condition prior to the adjustment of the electrical circuit.)

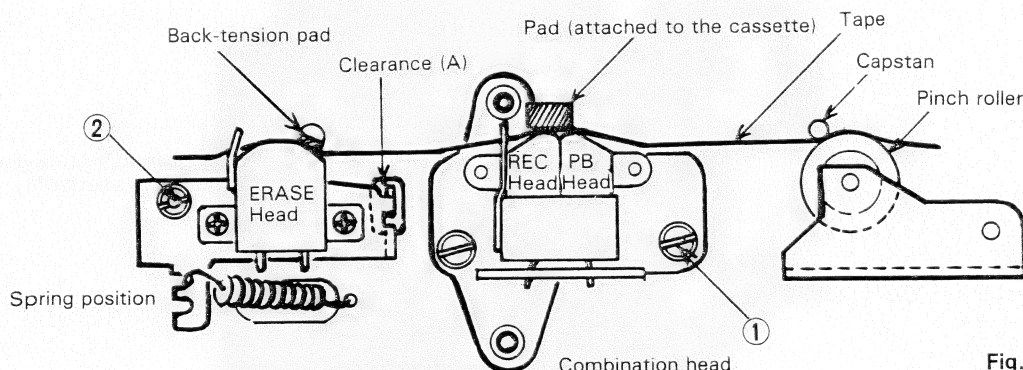


Fig. 21

1. After installing the specified parts in the appropriate positions:

- A. Snug screw ① gently, then back off about two turns. This makes the heads nearly horizontal.
- B. Snug screw ② gently, then back off about one turn. This will roughly position the tape in the center of the tape path.

For tightening screw ②, use a home make screwdriver, filed down to the specifications shown below. The same screwdriver can be used to tighten screw (1).

2. Make sure that the moving part of the erase head assembly moves smoothly around the pivot of screw ② and also confirm that there is enough clearance (A) in the play mode.

3. Next, make an operational adjustment. Load a C-120 cassette and adjust the height of the erase head by turning screw ②. Watching that the tape does not curl at the guides of both the combination and erase heads is indication of proper adjustment.

Notes:

- 1) After adjustment, confirm by ear that recorded sounds on the metal tape are completely erased.
- 2) After replacement of the erase or record/playback head, slacken the associated wire, clamp the new head, then confirm that this new head performs normal operation.
4. The head azimuth and pressure adjustments are made by using screws (3) and (4). Since the heads were already subject to these adjustments unit by unit, they should be made only when the tape does not travel due to the record/playback head section.

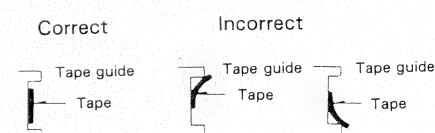
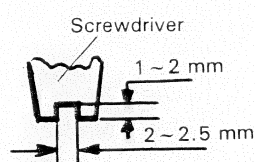


Fig. 22

Item	Adjustment	Adjusting point	Standard value	Remarks
Checking play-back torque	Employ a torque testing cassette tape for the checking.		40—70 gr-cm	
Checking fast forward torque	Measure the torque in the fast forward mode in the same manner as in the above.		More than 80 gr-cm	If the standard torque is not obtained, clean the motor pulley, idler disc circumference.
Checking re-wind torque	Measure the torque in the rewind mode in the same manner as in the above.		More than 80 gr-cm	
Checking wow and flutter	Connect a wow and flutter meter to the LINE OUT terminals. Play back the VTT-656A-S test tape. Check to see if the reading of the meter is within 0.021% (WRMS).			

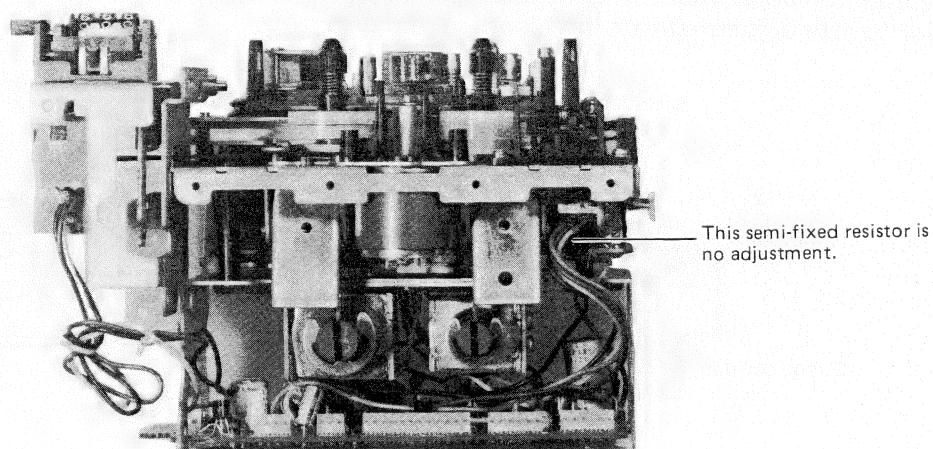
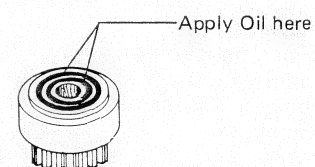


Fig. 23

Damping gear oil

Oil employed — Torque gease specified by JVC (KANTO KASEI GP-608V)

Applying method — Apply in both concaved sections as shown in the figure.



[III] Electrical circuit adjustment procedure

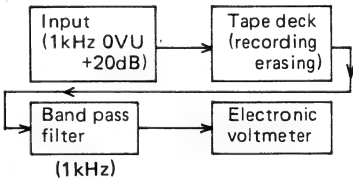
In the steps marked by an asterisk (*), adjustment should be performed, however, only checking is sufficient with steps other than those.

Adjustment should be performed in the order of steps 1,2,3

Perform these adjustments with the ANRS switch set to OFF and with the OUTPUT level control set max.

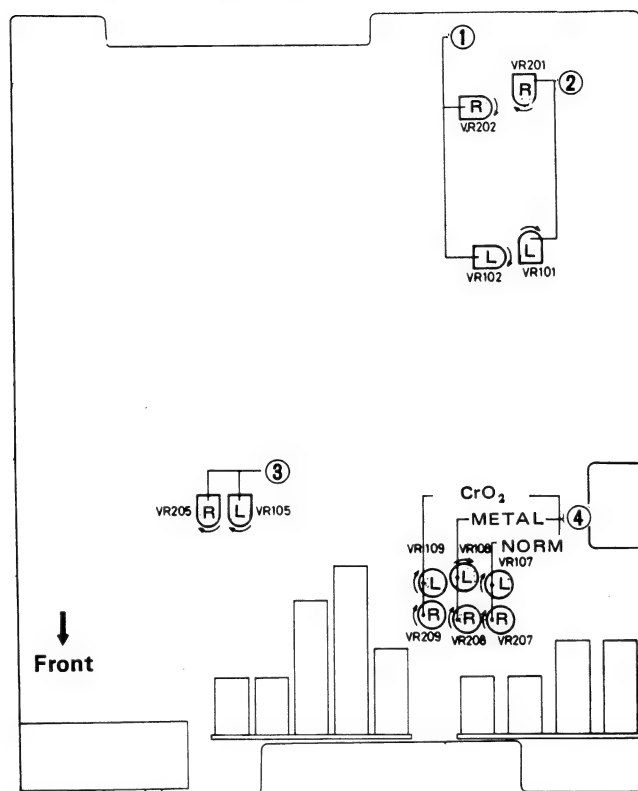
The DD-7 employs a combination record/playback head, thus permitting monitoring the sound being recorded. For adjustment, playback of the recorded sounds is therefore possible simply by switching the MONITOR switch from SOURCE to TAPE. (It is unnecessary to rewind the tape.)

Step	Item	Adjustment	Adjusting point	Standard value	Remarks
1 *	Adjusting playback level	1. Play back the VTT-664 Reference tape (1kHz) with the tape select switch set to the SF/NORM position. 2. Adjust VR101 and VR201 until the LINE OUT becomes about -4dBs.	VR101 201	-4 dBs	This adjustment becomes necessary when a change in playback level results (for example, due to head replacement).
2 *	Playback frequency response	Playback test tape VTT-675N (1kHz, 10kHz) for following adjustment. 1) Adjust VR102 and VR202 so that 10kHz signal and 1kHz signal gains become flat response.	VR102 202	Reference frequency; 1kHz $0 \pm 2\text{dB}$ at 10kHz	
3 *	Adjusting Fluorescent tube indicator sensitivity	1) Set the METER switch to VU. 2) Set the MONITOR switch to SOURCE, then apply a 1kHz signal of around -20dB to the Rch and Lch of the LINE IN terminals. 3) Adjust the INPUT LEVEL control so that the output level at the LINE OUT terminals is -4dB. 4) Adjust VR701 ("0"dB level adjustment) so that "0"dB lights at both R and L. At this time, "0"dB must go out at both R and L with the input ATT (attenuation) level lowered by 0.5dB. 5) Lower the input ATT level by 20dB. 6) Adjust VR501 (Lch) and VR601 (Rch) so that "-20"dB lights at both R and L. At this time, "-20"dB must go out at both R and L with the input ATT level lowered by 1dB. 7) Repeat steps 4) - 6).	VR701 VR501 601	0 VU -20VU	Perform the adjustment when the parts are replaced.
			For SF/ NORM tape; VR107, 207 For SA/ CrO ₂ tape; VR109, 209 For Metal tape; VR108, 208	Reference frequency; 1kHz $0 \pm 3\text{dB}$ at 50Hz $0 \pm 3\text{dB}$ at 12.5kHz	This checking should be performed for normal, chrome and metal tapes and for both right and left channels. 1. Bias current adjustment for a cassette deck should generally be performed referring to the record/playback frequency response. This is because the frequency response of a cassette deck depends more greatly upon the bias current than does that of an open reel deck. The current measuring method described below is an alternative one. 2. If the bias current is not properly adjusted, the record and playback characteristics become as shown left.
4 *	Checking record/playback frequency response	Record 1kHz, 50Hz and 12.5kHz signals at an input level of 0 VU to -20dB. Play back the tape. Check the see that the 50Hz and 12.5kHz signal output deviations fall within the standard range, using the 1kHz signal output as a reference.			

Step	Item	Adjustment	Adjusting point	Standard value	Remarks
5	Adjusting recording level	<ol style="list-style-type: none"> 1. Apply a 1kHz, approx. -10dB signal to the LINE IN terminals. Adjust the recording level controls until the signal is available at -4dBs at the LINE OUT terminals. 2. After checking to see if the FL indicator become 0, record the signal applied to both left and right channels using normal tape. 3. Play back the recording part. Perform the recording signal adjustment with VR105 and VR205 so that the FL indicator becomes 0. 	VR106, VR106,	0 VU	The level difference between left and right channels for SF/NORM tape, chrome tape and metal tape should be less than 1dB (1 VU). Perform the adjustment using a normal tape, level difference between recording and playback for SA/CrO ₂ and metal tapes, should be less than 1.5dB, and right channels should also be less than 1dB.
6	Checking record/playback signal distortion	<ol style="list-style-type: none"> 1. Record a 1kHz, -4dBs signal to LINE IN terminals and perform recording with the FL indicator becomes 0. 2. Play back the recorded part. Check the output with a distortion meter to see if the value conforms to the standard value. 	SF/NORM tape; Less than 2.5% SA/CrO ₂ tape; Less than 3% METAL tape; Less than; 2%		Be sure to perform this adjustment following bias current and recording level adjustment
7	Checking signal to noise ratio in recording/playback	<ol style="list-style-type: none"> 1. Record a 1kHz, 0 VU signal. Stop the input by disconnecting from the terminal to perform non-signal recording. 2. Play back the recorded part. Measure the 0 VU recording output and the non-signal recording output for comparison using an electronic voltmeter. Check to see if the value conforms to the standard value. 		SF/NORM, SA/CrO ₂ and Metal tapes; More than 42dB	Apply an output (-72dBs) to the MIC terminals with the recording level controls set to maximum so that the FL indicator becomes to 0.
8	Checking erasing coefficient	<ol style="list-style-type: none"> 1. Apply a 1kHz signal to the LINE IN terminals. Adjust the recording level controls until the FL indicator becomes 0. 2. Perform recording with the signal enhanced by 20dB. 3. Erase a part of the recording. 4. Measure the output difference between the erased part and non-erased part to compare with an electronic voltmeter. 		More than 65dB	<p>For the measuring, connect a band pass filter between the deck and the electronic voltmeter.</p>  <pre> graph LR Input["Input (1kHz 0VU +20dB)"] --> TapeDeck["Tape deck (recording erasing)"] TapeDeck --> BandPass["Band pass filter (1kHz)"] BandPass --> Voltmeter["Electronic voltmeter"] </pre>

[IV] Adjustment Location of Electrical Circuit

Main Amp. P.W. Board (Parts Ass'y Side View)



FL P.W. Board (Parts Ass'y Side View)

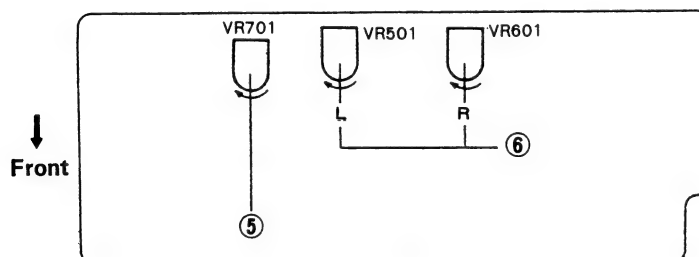


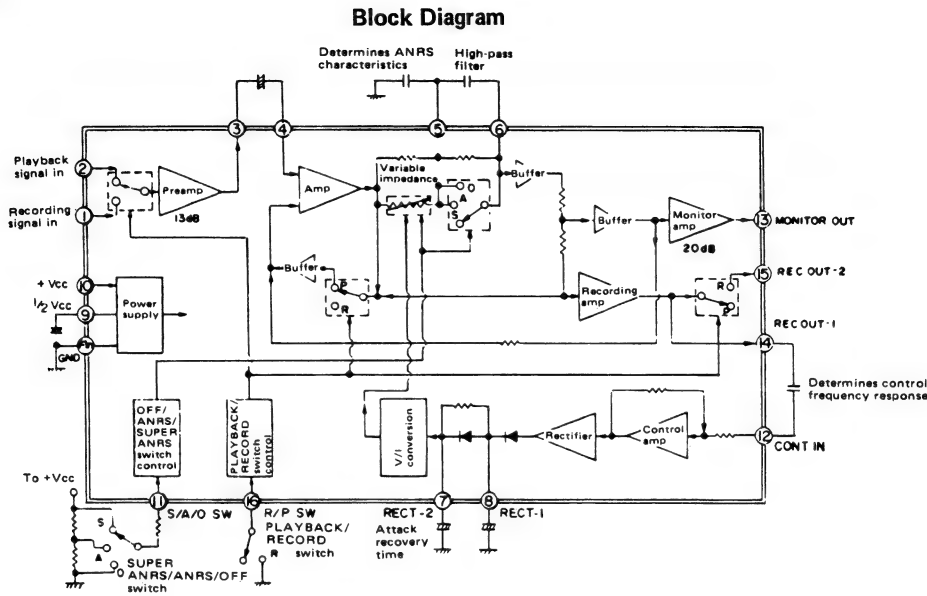
Fig. 24

- ① For playback frequency response adjustment (Turning in the direction of the arrow increases the signal current.)
 - ② For playback level adjustment (Turning in the direction of the arrow increases the playback levels.)
 - ③ For recording level adjustment (Turning in the direction of the arrow increases the recording levels.)
 - ④ For bias current adjustment (Turning in the direction of the arrow increases the bias current value.)
 - ⑤ For FL 0dB level Adjustment
 - ⑥ For FL -20dB level adjustment
- (Tuning in the direction of the arrow increases the levels)

Instruction of ICs

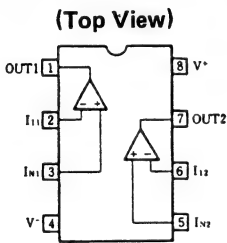
IC-101, 201 ANRS, Super ANRS

AN7362N

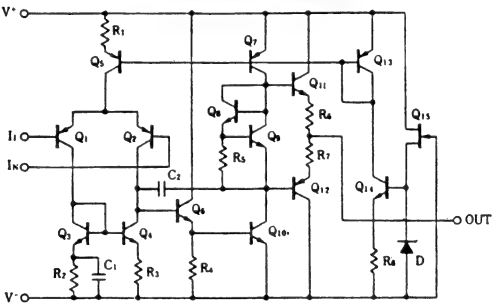


IC901 Headphone & Indicator Amp

UPC4557C



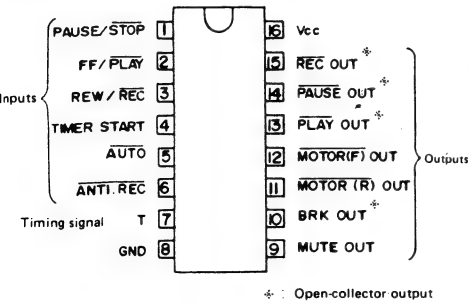
Equivalent Circuit (1/2)



IC801 Mecha. Control

M54886P

(Top View)



Block Diagram

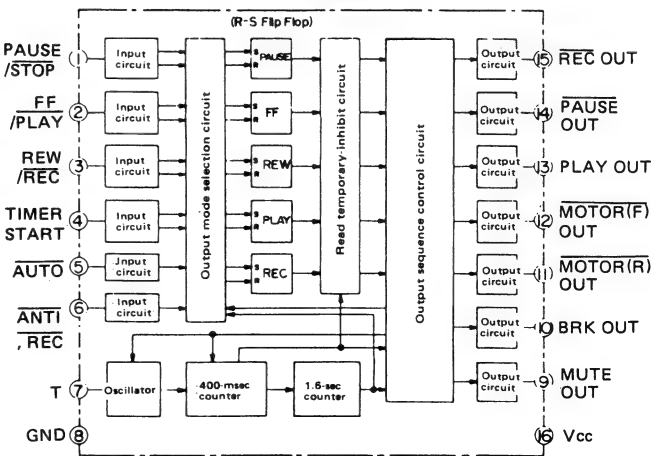


Fig. 25

— Continued to page 23 —

Standard Schematic Diagram of DD-7 (Amplifier Circuit)

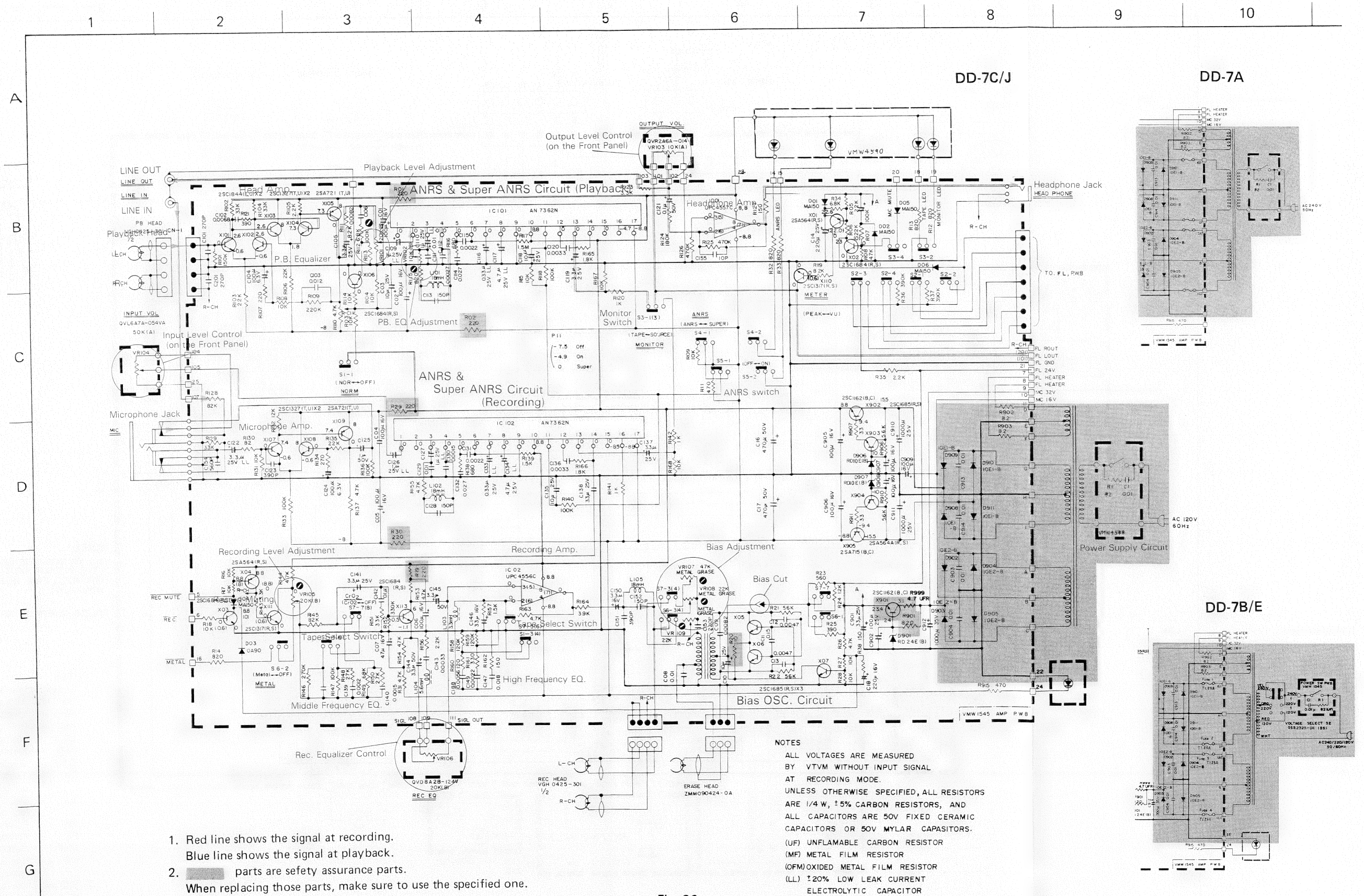


Fig. 26

Standard Schematic Diagram of DD-7 (Mecha. Control Circuit)

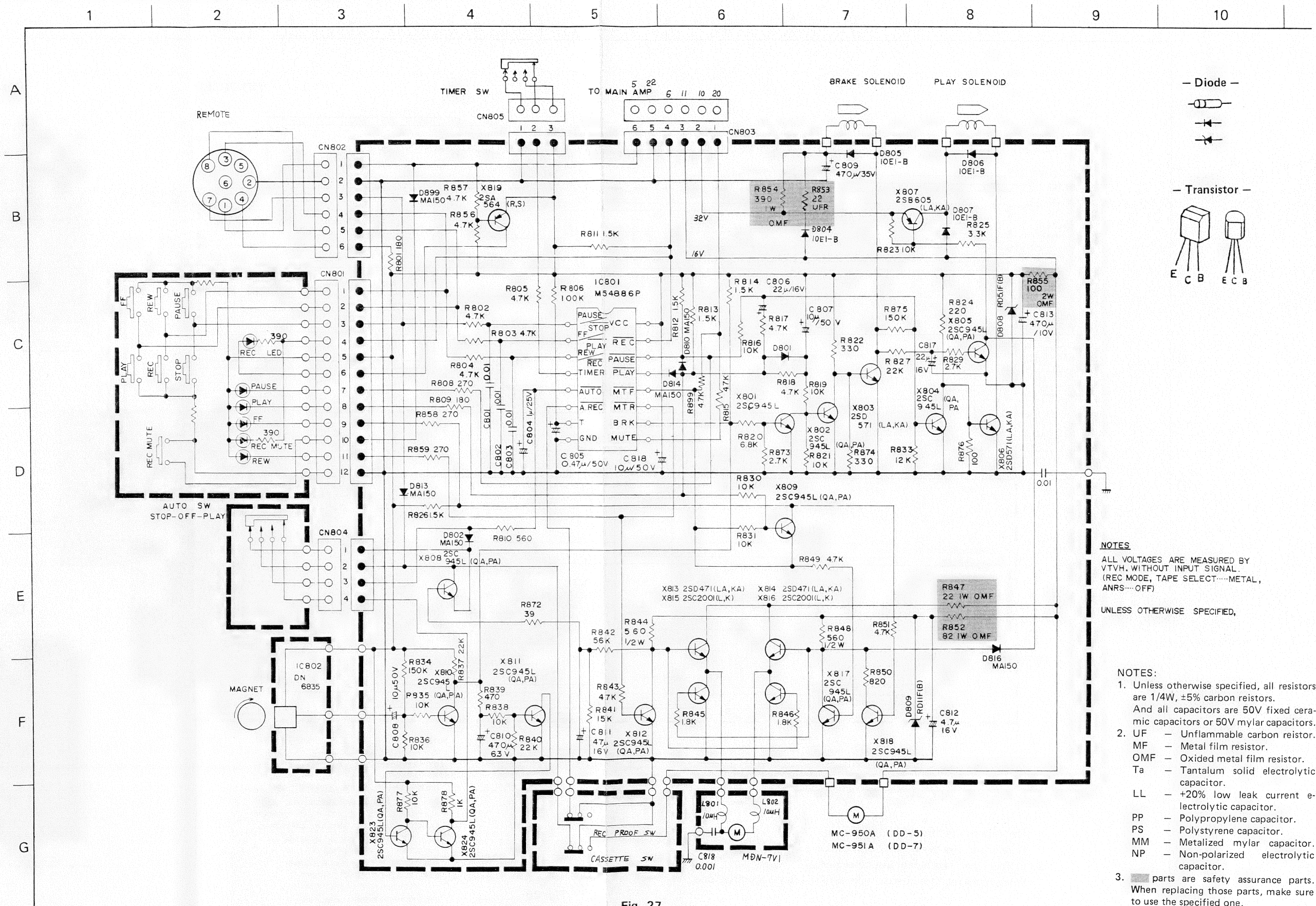


Fig. 27

Wiring Connection (1)

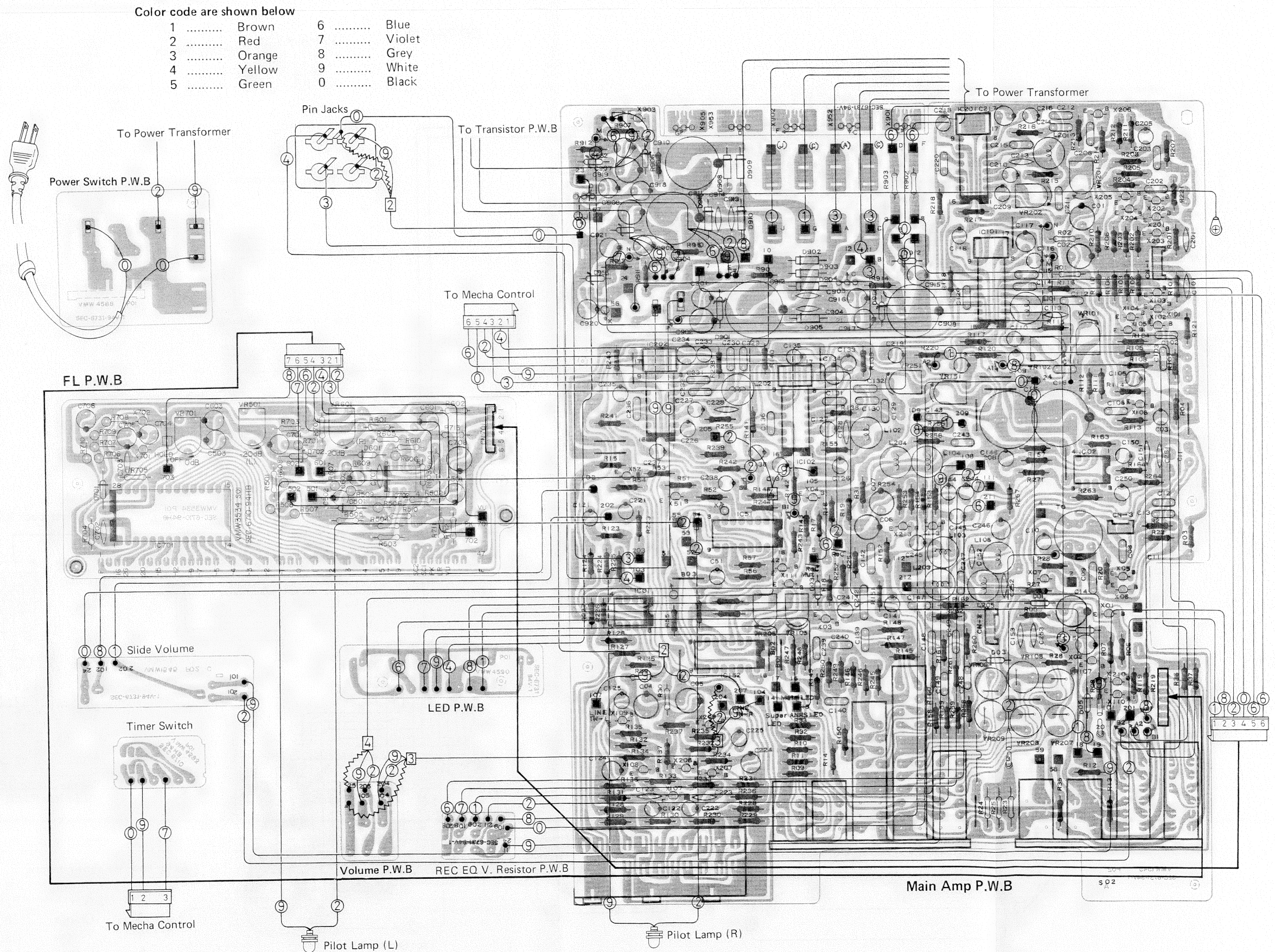


Fig. 28

Wiring Connection (2)

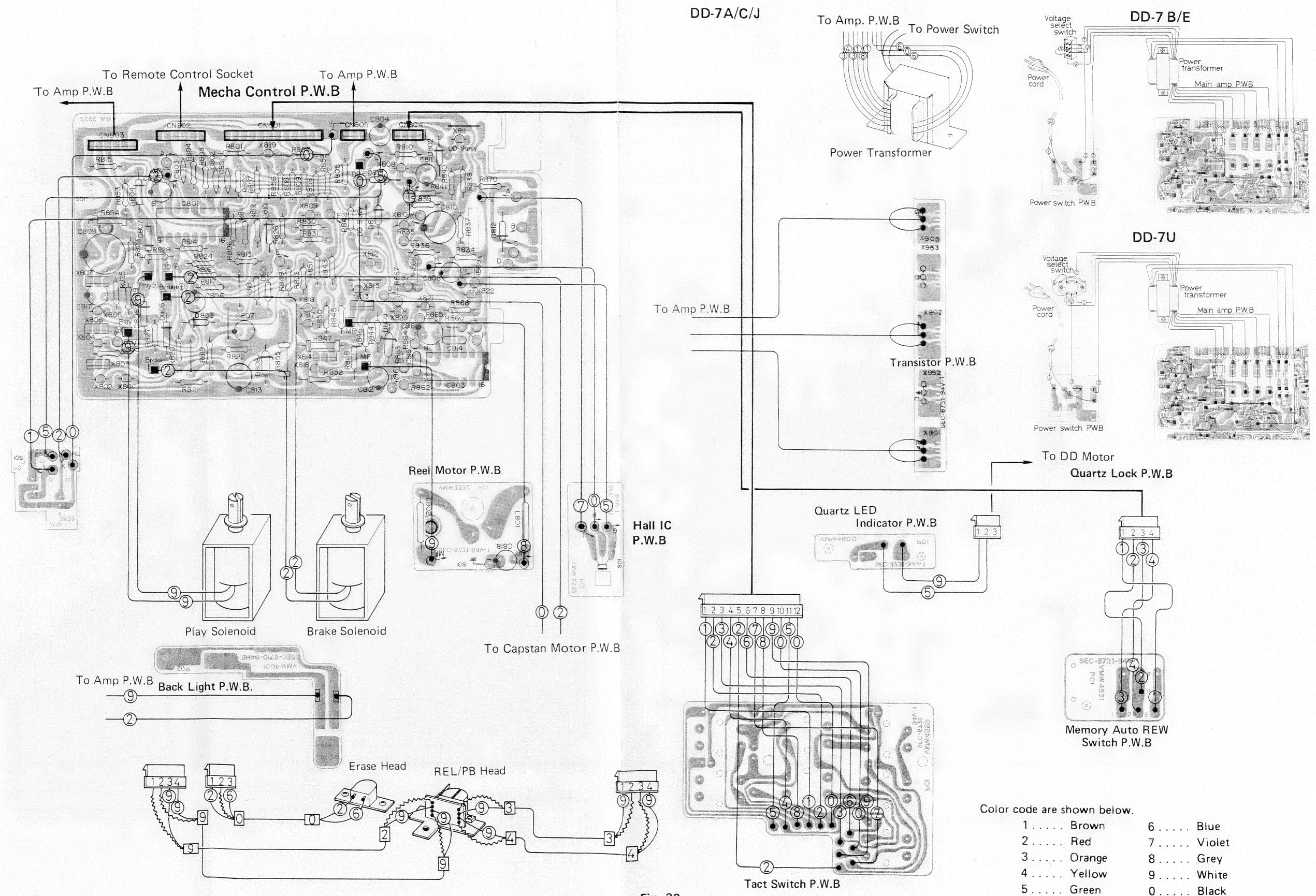
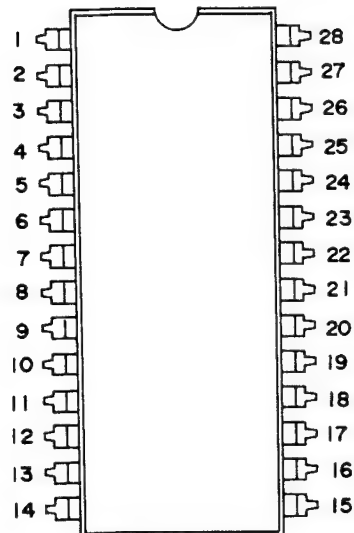


Fig. 29

— Continued from page 18 —

AN6870

(Top View)



Block Diagram

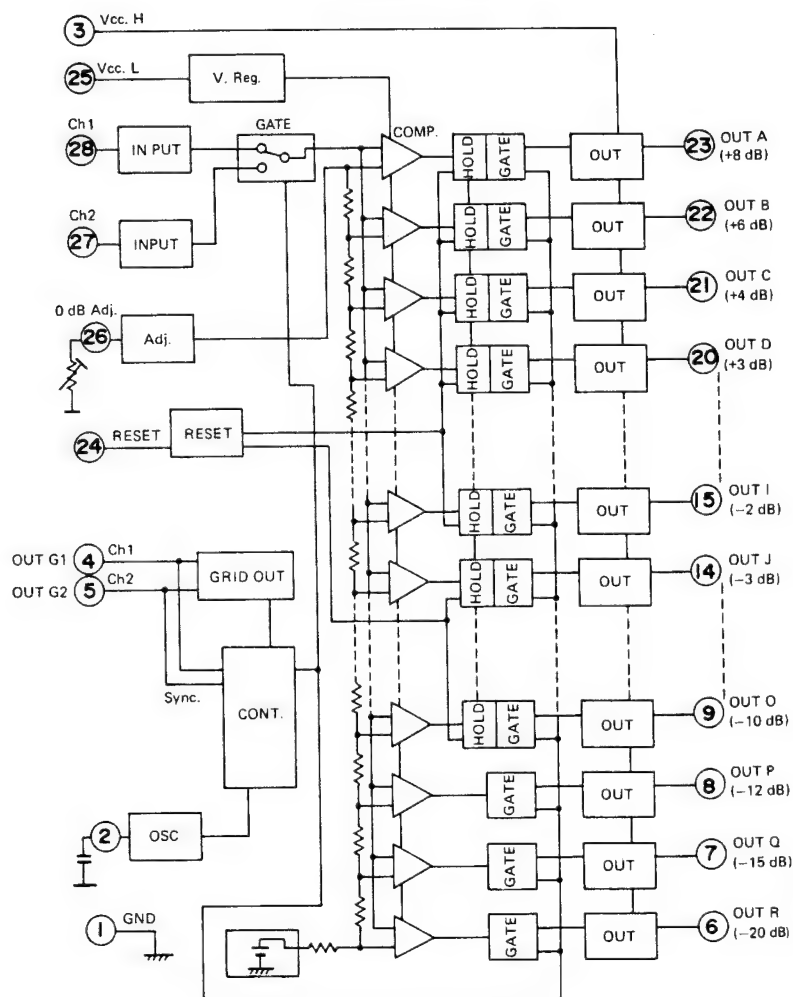


Fig. 30

Enclosure Assembly and Electrical Parts List (Except P.W. Board Parts)

△parts are safety assurance parts.

When replacing those parts, make sure to use the specified one.

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
1	VKL3252-002	Bracket		1
2	VKL4839-00B	Lock Arm Ass'y		1
3	VKH3013-005	Collar		1
4	VKZ4143-002	Special Screw		1
5	TJN265559-04	Silencer		1
6~9,12 (13,16,) 19,34	ZCDD7Y-CBF	Front Plate Ass'y		1 set
6	VJC1140-003	Front Plate		1
7	VJD3244-001	Button Escutcheon		1
8	VJD3242-001	Counter Escutcheon		1
9	VJK4001-001	Counter Lens		1
10	VKW3001-058	Compression Spring		1
11	VXP4083-001	Push Button	for Reset	1
12	VJK3167-001	Finder		1
13	VJD3247-001	Power Escutcheon		1
14	VJD3249-001	LED Escutcheon		1
15	VJK4132-002	Indicator		1
16	VJK4131-001	Filter		1
17	VKW4265-002.	Compression Spring		1
18	VXP4087-001	Push Button	for Power	1
19	VJD4430-001	Quartz Mark		1
20	VJD3252-00A	Holder Plate Ass'y		1
21	VJD4437-002	Disk Plate		1
22	LD-702	L.E.D		1
23	VKL4844-00A	Cross Bar Ass'y		1
24	VKL4842-00A	Holder Bracket Ass'y		1
25	VKW4250-005	Holder Spring		1
26	VKW4250-006	Holder Spring		1
27	VJD3237-003	Tape Holder (R)		1
28	VJD3238-003	Tape Holder (L)		1
29-1	VKY4217-001	Cassette Spring (R)		1
29-2	VKY4218-001	Cassette Spring (L)		1
30	VKL4403-00E	Shift Arm Ass'y		1
31	T43909-004	Metal		1
32	VKL4841-00A	Mecha Bracket (L) Ass'y		1
33	VKZ4143-002	Special Screw		2
34	VJD2165-001	Escutcheon	for Mecha. con	1
35	VXP4084-001	Push Button		5
36	VXP4085-001	"	for Stop, Play	2
37	VXP4086-00A	Push Button Ass'y	for Eject	1
38	VKL4169-00A	Gear Frame Ass'y		1
39	VKS4236-001	Spur Gear		1
40	VKS4109-004	Brake Drum		1
41	VKS3102-001	Rack Plate		1
42	VKH4123-001	Collar		1
43	VKW4106-001	Torsion Spring		1
44	VKS4110-002	Brake Arm		1
45	VKL4271-001	Rubber Retainer		1
46	VKZ4111-001	Rubber Tire		1
47	VKZ4001-011	Wire Holder		1
48	VKL4847-00A	Arm Bracket Ass'y		1
49	VKL4380-00A	Cross Bar Ass'y		1
50	VJT2049-001	Cassette Holder		1
51	VJT4035-002	Holder Plate		1
(52~54)	ZCDD5Y-CCA	Cassette Lid Ass'y		1 set
52	VJT3059-002	Cassette Lid		1
53	VJT4036-001	Lid Plate		1
54	VJT4037-001	Plate		2
55	VXS4041-001	Slide Knob	for Timer & Memory	2
56	VKL4869-001	Bracket	for Timer Safety	1
57	VKH3001-027	flange Collar		1

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
58	VXS3003-001	Slide Knob	for output	1
59	VJD4446-001	Blind		1
60	VKS4003-005	Pipe		1
61	VXL4127-00A	Knob Ass'y	for input (L)	1
62	VXL4128-001	Volume Knob	for input (R)	1
63	VXL4132-00A	Knob	for Rec EQ	1
64	VXP4088-001	Push Button		5
65	VXP4095-001	Push Button		2
66	VJC1141-001	Top cover		1
67	VKZ3002-001	Special Screw		4
68	VJC1142-001	Bottom Cover		1
69	VJF4003-002	Foot		4
70	VYN2075-003KA	Name Plate	DD-7A	1
	" -002KA	"	DD-7B	1
	" -004KA	"	DD-7C	1
	" -005KA	"	DD-7E	1
	" -006KA	"	DD-7J	1
	" -007KA	"	DD-7U	1
71	E48729-002	Plastic Rivet		2
72	VKL3285-001	Wall Bracket		1
73	VYSH203-001	Spacer		1
74	VMW4601-001	P.W. Board	Back light	1
75	VKZ4001-009	Wire Holder		1
76	VYSR102-017	Spacer		2
77	VYSR103-018	Spacer		4
78	VYSR102-013	Spacer		3
79	VYH4514-002	Shield case		1
81	VDL2075-002D	Display Ass'y		1
82	VKL1192-001	Amp. Chassis (R)		1
83	VKL2126-002	" (L)		1
84	VKL4868-001	Power Bracket		1
85	VMW4588-001	P.W. Board	for Power	1
86	△ QSP1110-305	Push Switch	for Power, DD-7A/E	1
	△ QSP1110-305BS	"	" , DD-7B	1
	△ QSP1110-308	"	" , DD-7C/J	1
	QSP1110-306	"	" , DD-7U	1
87	VKZ4001-011	Wire Holder		2
88	QHW3059-001	Wire Clamp		1
89	△ VTP66T8-011K	Power Transformer	DD-7A	1
	VTP66C8-011KBS	"	DD-7B	1
	△ VTP66A8-011K	"	DD-7C/J	1
	△ VTP66C8-011K	"	DD-7E	1
	△ VTP66U8-011K	"	DD-7U	1
90	WNS3000S	Washer		4
91	VKL1193-001	Front Bracket		1
92	VKL3259-002	Switch Bracket	for Memory	1
93	QLP3104-333SN	Pilot Lamp		2
94	VYH4315-001	Lamp Holder		2
95	VJC1139-005	Rear Panel	DD-7A/C/J	1
	" -002	"	DD-7B/E/U	1
96	△ QMP2560-200	Power Cord	DD-7A	1
	△ QMP9017-008BS	"	DD-7B	1
	△ QMP1200-200	"	DD-7C/J	1
	△ QMP3900-200	"	DD-7E	1
	△ QMP7600-200	"	DD-7U	1
97	△ QHS3876-162BS	Strain Relief	DD-7B	1
	△ QHS3876-162	"	DD-7A/C/E/J/U	1
98	VMJ3003-001	PIN jack Ass'y		1
99	QMC0888-008	DIN Socket	for Remote	1
100	QSS2301-102	Slide Switch	for Timer	1
101	QSP0021-002A	Tact Switch		7
102	SLP-155B-01V	LED		2
103	SLP-255B-01V	LED		4
104	VKL4882-001	Meter Bracket		1
105	VYSH104-011	Spacer		2

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
106	VKL4946-001	Bracket	DD-7B	1
107	△ QSS2325-011BS	Voltage select Switch	DD-7E	1
	△ QSS2325-011	"	DD-7U	1
108	△ QSR0084-001	"	for Voltage select switch	2
	SDSP3006RS	Screw	DD-7B/E V.S.SW. Bracket DD-7U	
109	VKL4275-001	Bracket	for Voltage Select Switch DD-7U	1
111	VKW3001-006	Spring		1
112	" -025	Compresion Spring		1
113	" -028	"		1
114	VKW3002-043	Spring		1
115	REE2000	E Ring	Brake Dram x 1 Arm Bracket Ass'y x 1	2
116	REE2500	"		5
117	QO3093-524	Washer		1
118	WNS2600Z	"		1
119	DPSP3006VS	Screw		2
120	VKH4150-001	Saft	Blind	2
121	LDSP2604R	"		1
122	LPSP2605	"		3
123	LPSP2606Z	Screw	Metal x 1 Flange Collar x 1	2
124	LPSP2608Z	"		1
125	LPSP3006VS	"	Push Switch x 4 Meter Bracket x 1 Voltage select Switch, DD-7U	5
126	LPSP3006ZS	"		2
127	SBS2608V	"		2
128	SBSB3006VS	"	Display P.W.B x 2 Main ~ chassis x 4 Rubber tire x 2 Power bracket x 1 Wire holder x 1 Power transformer x 2	6
129	SBSB3006Z	"		6
130	SBSF2610Z	"	P.W.B ~ Escutcheon	1
131	SDSB3006R	"	Power Bracket	1
132	SDSB3006Z	"	Front Bracket x 2 Switch Bracket x 2	4
133	SDSB3008R	"	Amp. ~ Rear Panel x 3 Pin jack x 2	5
134	SDSB3008Z	"	Bottom Cover	5
135	SDSF2605R	"	Tape holder (R) x 2 " (L) x 2 Cassette spring x 2	6
136	SDSP2605R	Screw	Remote	2
137	SDSP3008RS	"	Bottom cover ~ Front Bracket Switch Bracket	
138	SDSB3006C	"	Mecha ~ Amp. Chassis	2
139	SSSB3006Z	"	Bracket x 2	3
140	SSSP2004Z	"	Output Level	2
141	SSSP2605Z	"	Memory & Timer	4
142	SSSP3006CS	"	Mecha ~ Front Plate x 2 Chassis Bracket ~ Front Plate x 1	3
143	SSSP3006ZS	"	Switch Bracket ~ Front Plate x 1 Front Bracket ~ Front Plate x 3	6
145	SDSC3008Z	"	Wall Bracket x 2 Power Transformer	4
146	SBSC3006C	"		2
	QHZ2075-001	Wire Clamp	for wires	23
	TAH000459-01	Mark	CN804	1

Enclosure Assembly and Electrical Parts (Except P.W. Board Parts)

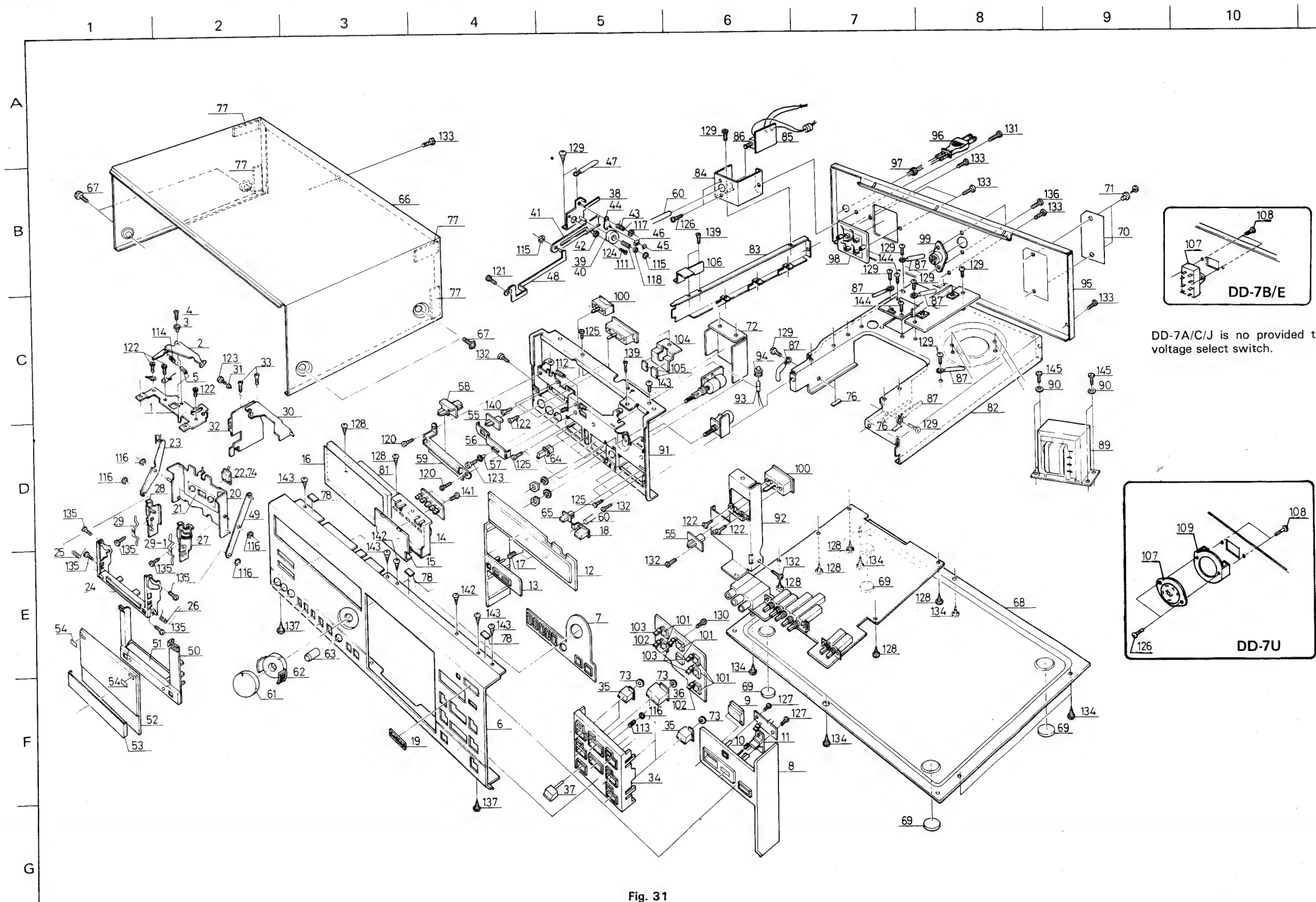


Fig. 31

Mechanical Component Parts

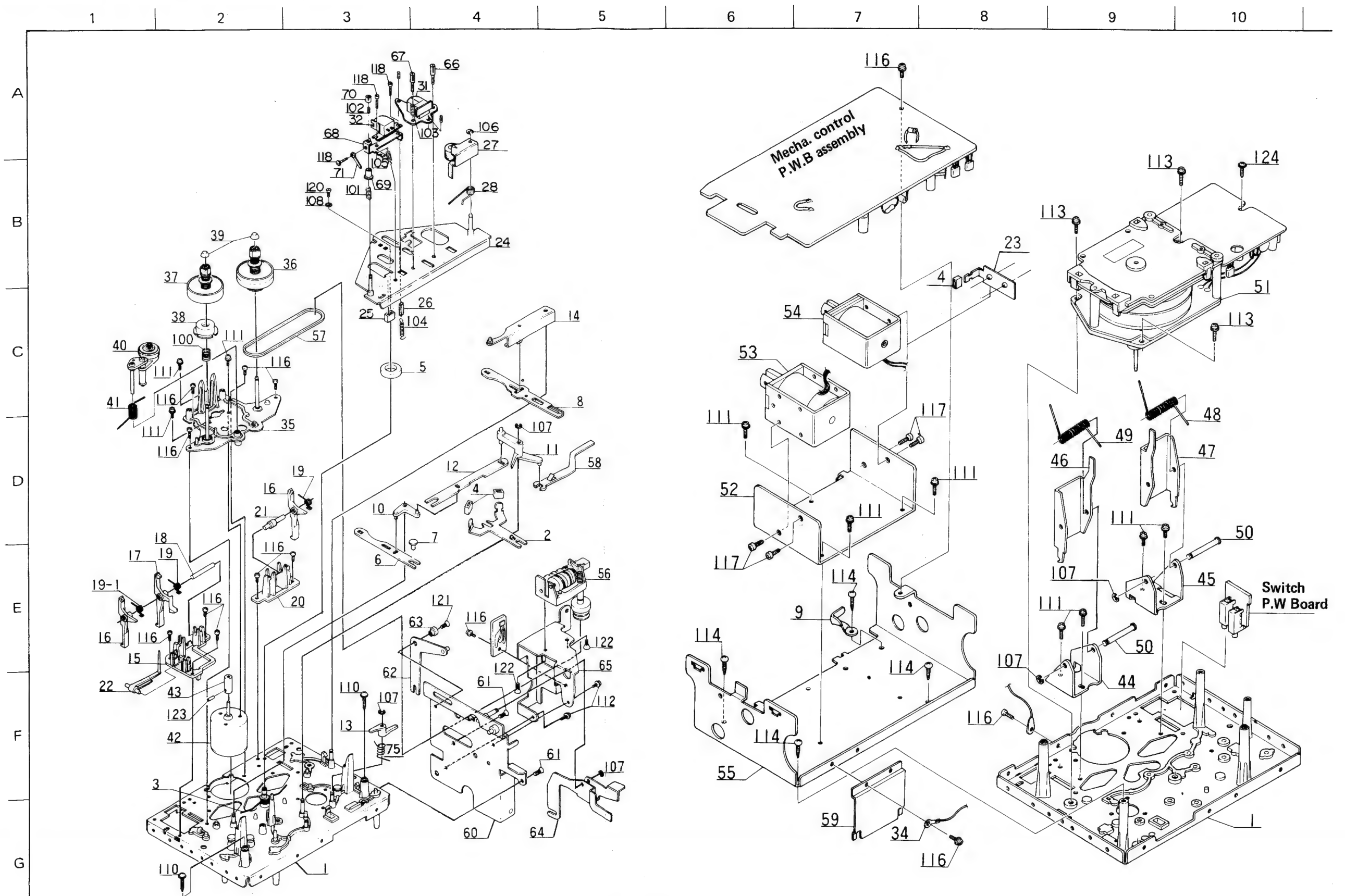


Fig. 32

Mechanical Component Parts List

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
1	VKL1184-00B	Chassis Base Ass'y		1
2	VKL4823-001	Brake Bar		1
3	VKW4243-001	Brake Bar Spring		1
4	VKZ4129-001	Rubber Tire		2
5	VKZ4005-002	Stopper		1
6	VKL4824-001	Lock Plate (1)		1
7	VKS4233-001	Lock Bush		3
8	VKL4945-001	Slide Plate		1
10	VKS4258-00B	Connecting Lever Ass'y		1
11	VKS4260-00B	Lock Lever Ass'y		1
12	VKL4827-001	Lock Plate (2)		1
13	VKS4262-001	Pause Lever		1
14	VKL4828-00A	Play Arm Ass'y		1
15	VKS2110-02	Switch Holder (L)		1
16	VKS4263-001	Pressure Lever		2
17	VKS4264-001	Switch Lever		1
18	VKH4264-001	Shaft		1
19	VKW4138-001	Pressure Lever Spring		2
19-1	VKW4191-001	Pressure Lever Spring		1
20	VKS3125-001	Switch Holder (R)		1
21	VKH4196-001	Shaft		1
22	VKS4265-002	Cassette Switch Lever		1
23	VKL4944-001	Stopper		1
24	VKL4874-00A	Slide Base Ass'y		1
25	VKZ4129-001	Rubber Tire		1
26	TJN265559-02	Silenser		1
27	VKP4113-00A	Pinch Roller Arm Ass'y		1
28	VKW4240-001	Pinch Roller Spring		1
29	VKS4266-001	Shift Lever		1
31	VGH0425-301-0A	Rec/PB Head Ass'y	Head plate = VND4020-001	1
32	ZMM090424-0A	E. Head Ass'y	Head plate = THC037417-02	1
34	VMZ0008-00A	Wire Ass'y		1
35	VKL3155-00A	Reel Disk Bracket Ass'y		1
36	VKR4113-00C	Take up Reel Ass'y		1
37	VKR4118-00B	Supply Reel Ass'y		1
38	VKS4130-001	Back Tension Base		1
39	VKS4131-002	Reel Stopper		2
40	VKS4151-005	Idler Ass'y Unit		2
41	VKW4134-001	Idler Spring		1
42	MDN-7V1-3	Reel Motor		1
43	VKR4121-001	Motor Pulley		1
44	VKL4832-001	Shaft Holder		1
45	VKL4832-002	Shaft Holder		1
46	VKL4833-001	Solenoid Lever		1
47	VKL4833-002	Solenoid Lever		1
48	VKW4241-001	Solenoid Lever Spring		1
49	VKW4241-002	"		1
50	VKH4292-001	Shaft		1
51	MC951A	DD Motor Ass'y		1
52	VKL4867-001	Solenoid Bracket		1
53	VGP0301-005	D.C. Solenoid Ass'y		1
54	VGP0201-008	D.C. Solenoid Ass'y		1
55	VKL3254-001	Hold Bracket		1
56	VKC6114-001S	Counter Ass'y	Counter Knob = VKC5139-002S	1
57	VKB3000-025	Counter Belt		1
58	VKL4912-002	Lock Bar		1
59	VKL4913-001	Flywheel Cover		1
60	VKL4835-00A	Mecha Bracket (R) Ass'y		1
61	VKZ4143-002	Special Screw	for Mecha Bracket	2
62	VKL4836-00A	Eject Arm Ass'y		1
63	VKH3013-004	Flange Collar		1

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
64	VKL4838-003	Eject Lever		1
65	VKL4870-002	Counter Bracket		1
66	VKH4238-001	Azimuth Screw		1
67	VKH4239-001	Rec/PB Head Screw		1
68	VKF4110-001	E. Head Lever		1
69	VKH3001-041	Flange Collar	for E Head Lever	1
70	VKH4240-001	Adjust Screw		1
71	VKZ4001-009	Wire Holder		1
72	VKY4212-001	Wire Holder		2
73	VKZ4001-011	Wire Holder		1
74	VYSR110-009	Spacer		1
75	VKW4268-001	Torsion Spring		1
100	VKW3001-026	Compression Spring	Back Tention	1
101	" -060	"		1
102	" -040	"		1
103	" -047	"	Azimuth screw	1
104	VKW3002-005	Tension Spring	Slide Base	2
105	" -043	"		1
106	REE2000	E Ring		1
107	REE2500	"		6
108	WNS3000N	Washer		1
109	Q03095-206	Washer		1
110	GPSA2612Z	Tapping Screw	Slide Base	2
111	LPSP2604Z	Screw	Shaft Holder x 4	10
			Solenoid Bracket x 3	
			Reel Motor x 3	
112	LPSP2605Z	"	Counter Bracket	2
113	LPSP2606Z	"	DD Motor Ass'y	3
114	SBSB2608Z	Tapping Screw	Holder Bracket	4
116	SPSP2606Z	"	Switch Holder (L) x 2	10
			" (R) x 3	
			Reel Ass'y Unit x 4	
117	SPSP3004ZS	Screw	Flywheel Cover x 1	4
118	SPSP2004N	"	D.C. Solenoid Ass'y	6
			Erase Head	
120	SSSK2605Z	Mini Screw	Slide Base	1
121	SSSP2605Z	Screw	Flange Collar	1
122	SSSP3006ZS	"	Counter Ass'y	2
123	YRS2603B	"	Motor Pulley	1
124	GPSA2608Z	Tapping Screw	D.D. Motor Ass'y	1

P.W. Board Parts (1) Main Amplifier Circuit

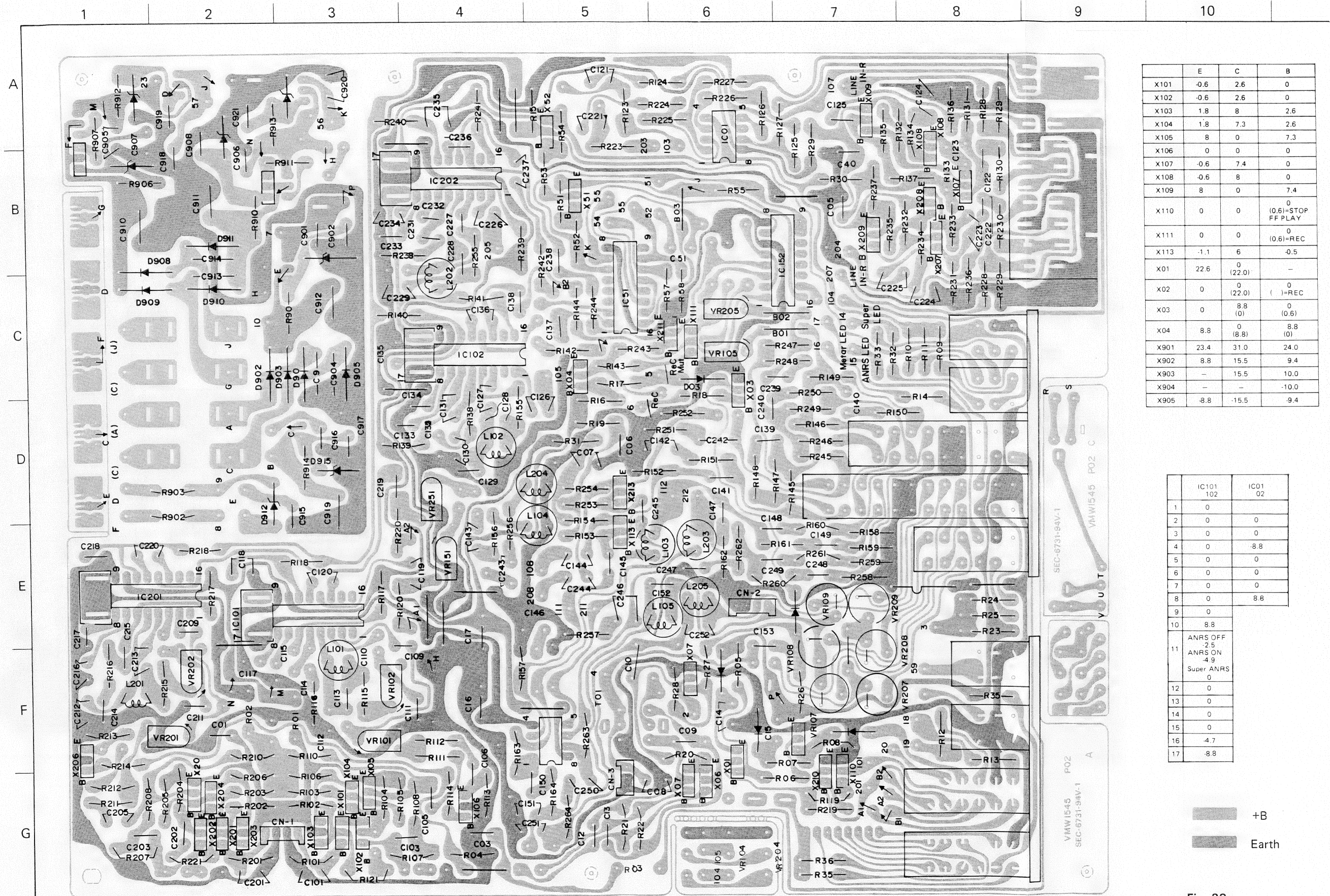


Fig. 33

P.W. Board Parts (2)

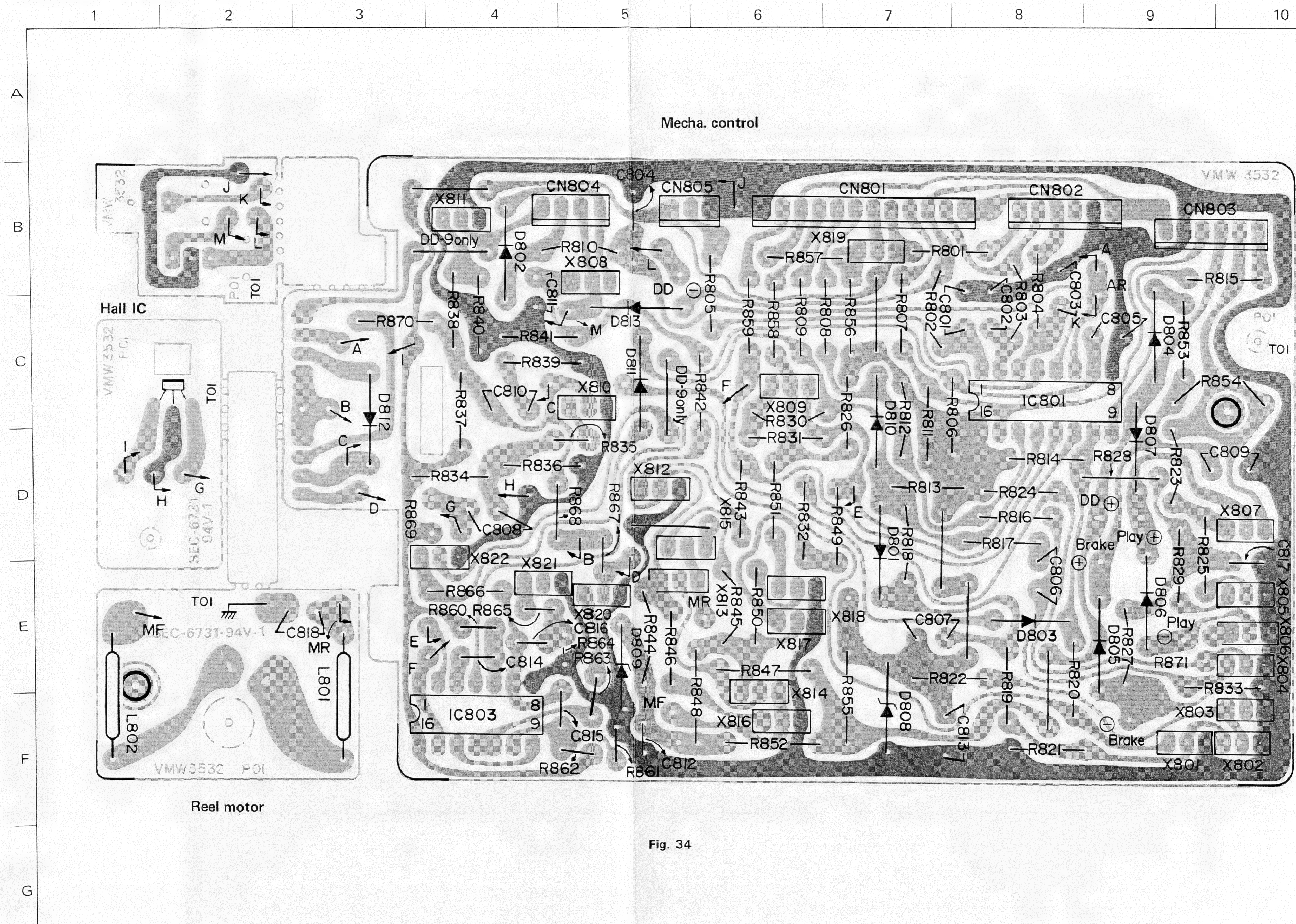


Fig. 34

△ parts are safety assurance parts.

When replacing those parts, make sure to use the specified one.

Main Amp. P.W. Board Parts List

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
R101,201	VMW1545-003	P.W.B	150kΩ 1/4W	1
R102,202,104,204,	QRD147J-154S	C. Resistor	33kΩ "	2
129,229,151,251	QRD141J-333S	"	22kΩ "	8
R103,203,105,205,	QRD141J-223S	"	220Ω "	10
106,206,135,235,	QRD143J-221S	"	10kΩ "	2
05,06	QRD141J-103S	"	220kΩ "	17
R107,207	QRD147J-224S	"	4.7kΩ "	4
R108,208,114,214,	QRD141J-472S	"	8.2kΩ "	14
167,267,168,268,	QRD141J-822S	"	6.8kΩ "	2
03,04,09,	QRD147J-682S	"	100Ω "	3
15~18,27,28	QRD141J-104S	"	820Ω "	14
R109,209,36,37	QRD141J-821S	"	68Ω "	4
R110,210,137,237,	QRD141J-680S	"	1.5MΩ "	4
144,244,153,253,	QRD141J-155S	"	12kΩ "	4
154,254,163,263,	QRD141J-123S	"	1kΩ "	8
26,31	QRD141J-102S	"	390Ω "	2
R111,211	QRD147J-391S	"	3.3kΩ "	2
R112,212,39	QRD141J-332S	C. Resistor	180kΩ "	2
R113,213,118,218,	QRD141J-184S	"	470kΩ "	4
136,236,140,240,	QRD141J-474S	"	150Ω "	5
147,247,169,269,	QRD141J-151S	"	82kΩ "	6
07,04	QRD141J-823S	"	82Ω "	2
R115,215,32,33	QRD141J-820S	"	10kΩ "	2
R116,216,138,238	QRD141J-103S	"	270Ω "	2
R117,217,139,239	QRD147J-271S	"	2.7kΩ "	4
R119,219,132,232	QRD141J-272S	"	27kΩ "	2
R120,220,141,241,	QRD141J-273S	"	68kΩ "	2
142,242,155,255	QRD141J-683S	"	330kΩ "	2
R121,221	QRD141J-334S	"	2.2kΩ "	3
R123,223	QRD141J-152S	"	1.5kΩ "	2
R124,224	QRD141J-124S	"	120kΩ "	4
R125,225,126,226	QRD141J-121S	"	120Ω "	2
R127,227,162,262,	QRD141J-331S	"	330Ω "	2
38	QRD141J-392S	"	3.9kΩ "	2
R128,228,133,233,	QRD143J-182S	"	1.8kΩ "	4
145,245	QRD149J-221S	C. Resistor	220Ω "	5
R130,230	QRD147J-473S	"	47kΩ "	1
R131,231	QRD147J-471J	"	470Ω "	2
R134,234	QRD141J-821S	"	820Ω "	3
143,243	QRD149J-100S	"	10Ω "	1
R150,250,143,243	QRD141J-563S	"	56kΩ "	2
R148,248	QRD149J-561S	"	560Ω "	1
R149,249	" -122S	"	1.2kΩ "	1
R152,252	" -391S	"	390Ω "	1
R156,256,35				
R157,257				
R158,258,159,259				
R160,260				
R161,261				
R164,264				
R165,265,166,266				
R01,02,19,29,30				
R08				
R11,915				
R12,13,14				
R20				
R21,22				
R23				
R24				
R25				

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
R901	QRD149J-821S	"	820Ω 1/4W	1
R902,903	" -8R2S	"	8.2Ω "	2
R906,910	QRD147J-562S	"	5.6kΩ "	2
R907,911	QRD149J-330S	"	33Ω "	2
VR101,201,105,205	QVP8A0B-024	V. Resistor	20kΩ	4
VR102,202	" -014	"	10kΩ	2
VR103,203	QVR2A6A-014	V. Resistor	10kΩ	2
VR104,204	QVL6A7A-054VL	V. Resistor	50kΩ	1
VR106,206	QVD8A2A-124V	"	120kΩ	1
VR107,207,109,209	QVZ3501-473	"	47kΩ	4
VR108,208	QVZ3501-223	"	22kΩ	2
C101,201	QCS11HJ-271	C. Capacitor	270pF 50V	2
C101,202	QFM41HJ-682	M. Capacitor	0.0068μF "	2
C103,203	QFM41HJ-123	"	0.012μF "	2
C104,204,124,224	QET40JR-107N	E. Capacitor	100μF 6.3V	4
C105,205,137,237, 138,238,141,241, 144,244,145,245,15	QET41HR-335N	"	3.3μF 50V	13
C106,206	QFM41HJ-822	M. Capacitor	0.0082μF "	2
C109,209,110,210, 126,226,127,227	QEB41EM-105M	L.L.C.E. Capacitor	1μF 25V	8
C111,211,129,229	QFM41HJ-103	M. Capacitor	0.01μF 50V	4
C112,212,143,243	QFM41HJ-272	"	0.0027μF "	4
C113,213	QCS11HJ-151	C. Capacitor	150pF "	2
C114,214,132,232	QFM41HJ-273	M. Capacitor	0.027μF "	4
C115,215,131,231, 149,249	QFM41HJ-222	M. Capacitor	0.0022μF "	6
C116,216,133,233	QEB41EM-334M	L.L.C.B. Capacitor	0.33μF 25V	4
C117,217,134,234	QEB41EM-475M	"	4.7μF "	4
C118,218,135,235, 146,246,10,03	QET41ER-106N	"	10μF "	8
C120,220,136,236	QFM41HJ-332	M. Capacitor	0.0033μF 50V	4
C121,221	QET41HR-104N	E. Capacitor	0.1μF "	2
C122,222	QEB41EM-335M	L.L.C.E. Capacitor	3.3μF 25V	2
C125,225	QET41HR-105N	E. Capacitor	1μF 50V	2
C128,228	QCS11HJ-471	C. Capacitor	470pF "	2
C130,230,12,13	QFM41HJ-472	M. Capacitor	0.0047μF "	4
C139,239	QFM41HJ-122	"	0.0012μF "	2
C140,240	QFM41HJ-152	"	0.0015μF "	2
C142,242	QFM41HJ-104	"	0.1μF "	2
C147,247	QFM41HJ-183	"	0.018μF "	2
C148,248	QFM41HJ-562	"	0.0056μF "	2
C150,250	QET41CR-336N	E. Capacitor	33μF 1.6V	2
C151,251	QCS11HJ-391	C. Capacitor	390pF 50V	2
C152,252	QCS12HJ-151	"	150pF 500V	2
C153,253	QCY12HK-221	"	220pF 500V	2
C155,255	QCS11HJ-100	"	10pF 50V	2
C156,256	QCS11HJ-220	"	22pF "	2
C157,257,158,258	QCS11HJ-470	"	47pF "	4
C01,02,06	QET41CR-107N	E. Capacitor	100μF 16V	3
C04,05	QET41CR-227N	"	220μF 16V	2
C07	QET41CR-476N	"	47μF 16V	1
C08	QFP42AJ-103	P.P. Capacitor	0.01μF 100V	1
C09	QFP82AJ-822	P.P. Capacitor	0.0082μF 100V	1
C11	QFM41HJ-153	M. Capacitor	0.015μF 50V	1
C14	QET41ER-227N	E. Capacitor	220μF 25V	1
C16,17	VCE41HM-477N	"	470μF 50V	2
C18	QET41CR-227N	"	220μF 16V	1
C19	QET41HR-475N	"	4.7μF 50V	1
C901	QET41ER-336N	E. Capacitor	33μF 25V	1
C902	QET41ER-107N	"	100μF "	1
C903,904	QCF12HP-103	C. Capacitor	0.01μF 500V	2

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
C905,906,907,908	QET41CR-107N	"	100 μ F 16V	4
C909	QET41ER-107N	"	" 25V	1
C910,911	△QET41ER-228N	"	2200 μ F "	2
C912	QET41VR-108N	"	1000 μ F 35V	1
C913,914	QCF12HP-103	"	0.01 μ F 500V	2
D01,04,05,06	MA150	Si. Diode	or DS442	5
D03	OA90	Ge. Diode		1
D901	RD24E(B3)	Diode		1
D902,903,904,905	△10E2-B	"		4
D906,907	RD10E(B)	"		2
D908,909,910,911	10E1-B	"		4
X101,201,102,202	2SC1844(E,V)	Si. Transistor		4
X103,203,104,204, 107,207,108,208, 110,210,111,211	2SC1327(T.V)	"		12
X105,205	2SA992(F.E.V)	"		2
X106,206,113,213, 02,03	2SC1684(R,S)	"		6
X01,04	2SA564(R.S)	"		2
X05,06,07	2SC1685(R.S)	"		3
X901,902	△2SC1162(B.C)	"		2
X903	2SC1685(R.S)	"		1
X904	2SA564A(R.S)	Si. Transistor		1
X905	△2SA715(B.C)	"		1
L101,201	VQP0001-183	Inductor		2
L102,202	VQP0006-562	"		2
L103,203	VQP0001-332	"		2
L104,204	VQP0001-562	"		2
L105,205	VQP0001-183	"		2
IC101,201,102,202	AN7362N	IC		4
IC01	VPC4557C	"		1
IC02	VPC4556C	"		1
	TAX000331-02	Fuse Holder		8
	△QMF51A2-1R25	Fuse	DD-7A1E	2
	△QMF51A2-1R25BS	"	DD-77B	2
	△QMF51A2-1R25	Fuse	DD-7A1E	2
	△QMF51A2-1R25BS	Fuse	DD-7B	2
	TAZ000509-10	Fuse Seal	T1.25A	4
T01	VQH1009-014	OSC Coil		1
	QSP0040-002	Push Switch	T. S & NR	1
	QSP0229-151	"	M & FL	1
	VMJ5004-003	Jack Ass'y	MIC	1
	QMV5005-003	Plug Ass'y	E. Head	1
	QMV5005-004	"	P. Head	2
			R. Head	
	QMV5005-007	"	FL	1
	VKL4941-002	Heat Sink		1
	LPSP3006ZS	Screw		3
	SBSB3006VS	"		2
	E40130-001	Tab	Lamp	3
	E43727-002	"		39
	VMZ0005-001	Post Pin		4
	QWY123-019	Bus Wire	B01, 02	15
	V44611-007	"		1
	V44611-009	"		1

Mechanical Control P.W. Board Parts List

△ parts are safety assurance parts.

When replacing those parts, make sure to use the specified one.

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
R801,809	QRD147J-181S	C. Resistor	180Ω 1/4W	2
R802~805,815,817	" -472S	"	4.7kΩ "	13
818,843,849,851, 856,857,899				
R806	QRD147J-104S	"	100kΩ "	1
R807	V44611-008	Formed Bus Wire		1
R808,858,859	QRD147J-271S	C. Resistor	270Ω "	4
R810	" -561S	"	560Ω "	1
R811,812,813,814, 826	" -152S	"	1.5kΩ "	5
R816,819,821,823, 830,831,835,836, 838,878	" -103S	"	10kΩ "	10
R820	" -682S	"	6.8kΩ "	1
R822,874	QRD143J-331S	"	330Ω "	1
R824	QRD147J-221S	"	220Ω "	1
R825	" -332S	"	3.3kΩ "	1
R827,837,840	" -223S	"	22kΩ "	3
R829,873	" -272S	"	2.7kΩ "	2
R833	QRD147J-123S	C. Resistor	12kΩ "	1
R834	" -154S	"	150kΩ "	1
R839	QRD143J-471S	"	470Ω "	1
R841	QRD147J-153S	"	15kΩ "	1
R842	" -563S	"	56kΩ "	1
R844	QRD121K-561	"	560Ω 1/2W	1
R845,846	QRD147J-182S	"	1.8kΩ 1/4W	2
R847	△ QRG019J-220	O.M.F. Resistor	22Ω 1W	1
R848	QRD121K-561	C. Resistor	560Ω 1/2W	1
R850	QRD147J-821S	"	820Ω 1/4W	1
R852	△ QRG019J-820	O.M.F. Resistor	82Ω 1W	1
R853	△ QRD126J-220	Unflammable Resistor	22Ω 1/2W	1
R854	△ QRG019J-391	O.M.F. Resistor	390Ω 1W	1
R855	△ QRG029J-101	"	100Ω 2W	1
R872	△ QRD143J-390S	C. Resistor	39Ω 1/4W	1
R875	QRD143J-154S	C. Resistor	150kΩ "	1
R876	" -101S	C. Resistor	100Ω "	1
C801,802,803	V44611-008	Formed Bus Wire		7
C804,820	QCF11HP-103	Fixed C. Capacitor	0.01μF 50V	3
C805	QET41HR-105N	E. Capacitor	1μF "	2
	QEB41HM-474M	" (Low Leak)	0.47μF "	1
C806,817	QET41CR-226N	E. Capacitor	22μF 16V	2
C807,808,819	QET41HR-106N	"	10μF 50V	3
C809	QET41VR-477N	"	470μF 35V	1
C810,813	QET40JR-477N	"	470μF 6.3V	2
C811,812	QET41CR-476N	"	47μF 16V	2
C818	QCF11HP-102	C. Capacitor	0.001μF 50V	1
C821	QET41ER-108N	E. Capacitor	1000μF 25V	1
D801,802,803,810, 813,814,816	MA150	Si. Diode		7
D804~807	10E1-B	"		4
D808	RD5.1F(B)	Zener Diode		1
D809	RD11F(B)	"		1
X801,802,804,805, 808~812	2SC945L(QA,PA)	Si. Transistor		9
X803,806	2SD571(LA,KA)	"		2
X813,814	2SD471(LA,KA)	Si. Transistor		2
X815,816	2SC2001(L,K)	"		2
X817,818,823,824	2SC945L(QA,PA)	"		4
X819	2SA733A(P,K)	"		1
IC801	M54886P	IC		1
IC802	DN6835	"		1
CN801	QMV5004-012	Plug Ass'y		1
CN802,803	" -006	"		2
CN804	" -004	"		1
CN805	" -003	"		1
	TAH000459-01	Mark	for CN803	1
	E43727-003	Wrapping Pin		8
L801,802	QCF11HP-473	F. C. Capacitor		1
	50242-5	Lug		1
	QSP0029-001	Slide SW	for Tape SW Rec Proof	2
	T41572-001	Inductor		2
	V44611-007	Formed Bus Wire		1
	QMV5004-003	Plug Ass'y		1

Display P.W. Board Parts

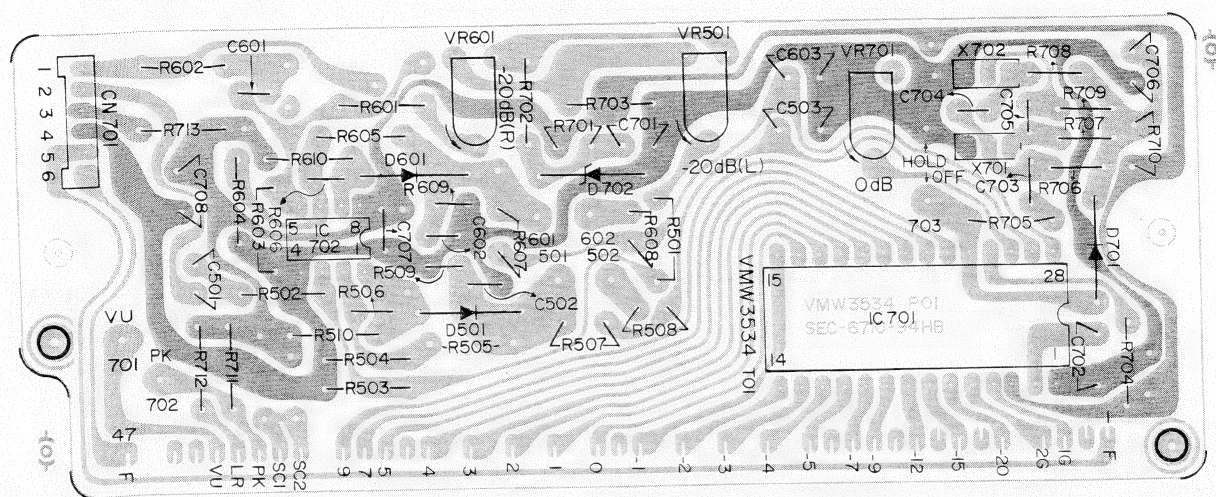


Fig. 35

△ parts are safety assurance parts.

When replacing those parts make sure to use the specified one.

Display P.W. Board Parts List

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
IC701 IC702 X701,702	VMW3534-101	P.W.B		1
	BG-70ZS	FL. Tube		1
	AN6870	IC		1
	UPC358C	"		1
	2SC945L(QA,PA)	Transistor		2
D501,503,601,603, 701	MA150	Diode		5
D502,602	RD8.2E(B)	Zener Diode		2
D702	RD4.3E(B3)	"		1
R501,601	QRD143J-274S	C. Resistor	270kΩ 1/4W	2
R502,602	QRD147J-683S	"	68kΩ "	2
R503,504,603,604	QRD143J-223S	"	22kΩ "	4
R505,605	QRD147J-684S	"	680kΩ "	2
R506,606	QRD143J-474S	"	470kΩ "	2
R507,607	QRD143J-334S	"	330kΩ "	2
R508,608,706,709	QRD143J-103S	"	10kΩ "	4
R510,610,702,703	QRD147J-222S	"	2.2kΩ "	4
R701	QRD143J-152S	"	1.5kΩ "	1
R704	QRD147J-151S	C. Resistor	150Ω "	1
R705	QRD147J-271S	C. Resistor	270Ω "	1
R707,708	QRD143J-274S	"	270kΩ "	2
R710	QRD143J-273S	"	27kΩ "	1
R713	△QRD126K-220	"	22Ω "	1
VR701	QVP8A0B-024	V. Resistor	20kΩ "	1
VR501,601	QVP8A0B-023	"	2kΩ "	2
C501,502,503,504, 601,602,603,604	QET41HR-474N	E. Capacitor	0.47μF 50V	8
C701	QET41AR-476N	"	47μF 10V	1
C702	QCF11HP-473	C. Capacitor	0.047μF 50V	1
C703,707	" -103	"	0.01μF "	1
C704,705	QET41HR-475N	E. Capacitor	4.7μF "	2
C706	QET41AR-476N	"	47μF 10V	1
C708	QET41ER-107N	"	100μF 25V	1
C709	QET41HR-105N	"	1μF 50V	1
	V44611-008	Formed Bus Wire	10mm	7
	E43727-002	Wrapping Tab		1
	QMV5005-006	Plug Ass'y		1
		CN701		1

Display Schematic Diagram

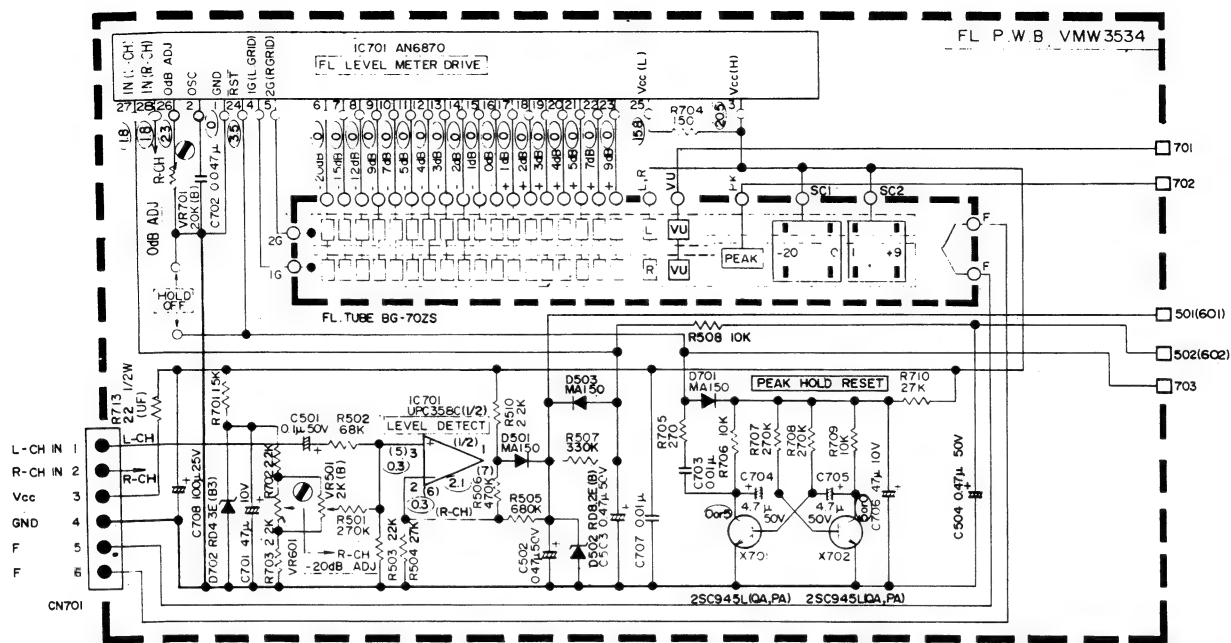


Fig. 36

Motor Schematic Diagram

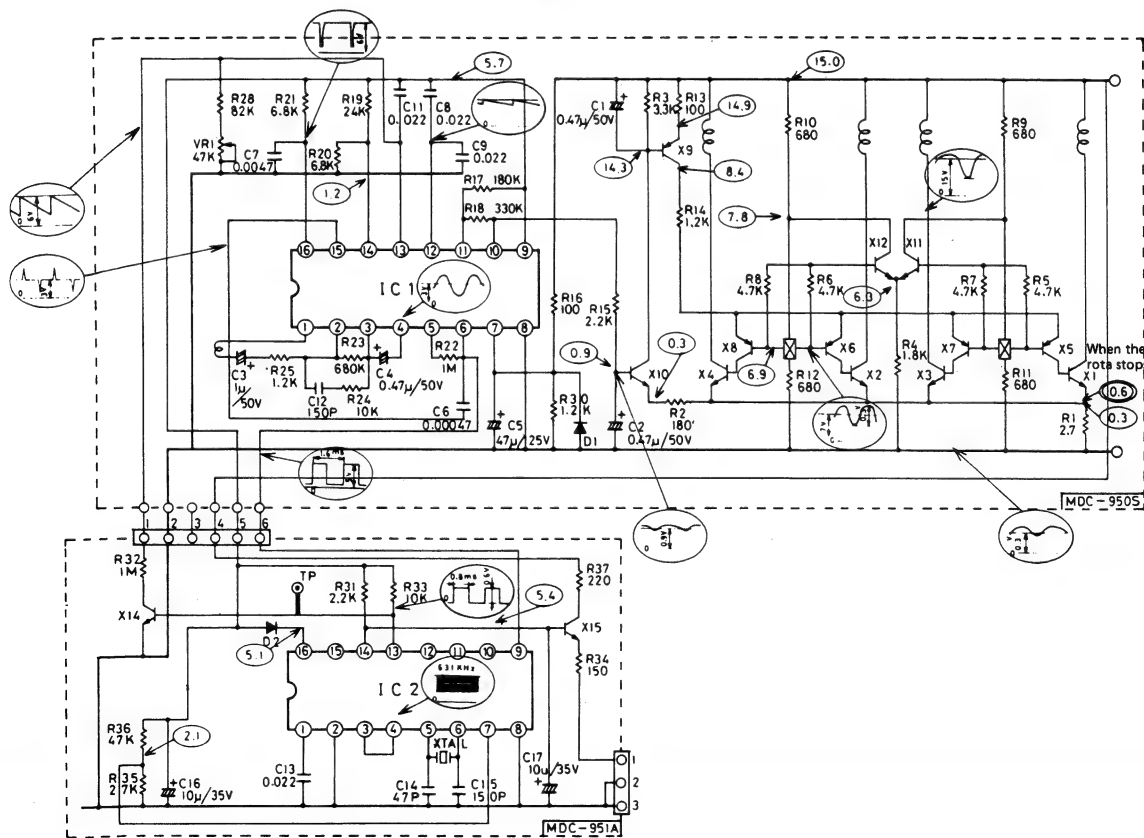


Fig. 37

Motor Circuit Parts List

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
R1	QRD143J-272S	C. Resistor	2.7k Ω 1/4W	1
R2	" -181S	"	180 Ω "	1
R3	" -332S	"	3.3k Ω "	1
R4	" -182S	"	1.8k Ω "	1
R5,7,8	" -472S	"	4.7k Ω "	3
R6,36	" -473S	"	47k Ω "	2
R9,10	" -681S	"	680 Ω "	2
R11,12	QRD141J-681S	"	680 Ω "	2
R13,16	QRD143J-101S	"	100 Ω "	2
R14,25,30	" -122S	"	1.2k Ω "	3
R15,31	" -222S	"	2.2k Ω "	2
R17	" -184S	"	180k Ω "	1
R18	" -334S	"	330k Ω "	1
R19	" -243S	"	24k Ω "	1
R20,21	" -682S	"	6.8k Ω "	2
R22,32	" -105S	"	1M Ω "	2
R23	" -684S	"	680k Ω "	1
R24,33	" -103S	"	10k Ω "	2
R28	QRV146F-823	M. Resistor	82k Ω "	1
R34	QRD143J-151S	C. Resistor	150 Ω "	1
R35	QRD143J-273S	C. Resistor	27k Ω "	1
R37	" -221S	"	220 Ω "	1
VR1	RVAH306-473	V. Resistor	47k Ω "	1
C1,2,4	QET41H-474	E. Capacitor	0.47 μ F 50V	3
C3	" -105	"	1 μ F "	1
C5	" -476	"	47 μ F "	1
C6	QFN41HK-471	M. Capacitor	470pF "	1
C7	QFM41HK-472	"	0.0047 μ F "	1
C8,9	" -223	"	0.022 μ F "	2
C11	APS223J50-223	Film Capacitor	(or J100) 0.022 μ F	1
C12,15	QCT05CH-151	C. Capacitor	150pF 50V	2
C13	QCF11HP-223	"	0.022 μ F "	1
C14	QCT05CH-470	"	47pF "	1
C16,17	QET41V-106	"	10 Ω F 35V	2
D1,2	1SS53	Diode		2
X1~4	2SC2001(K.L)	Transistor		4
X5~8	2SA733(P.Q)	"		4
X9	2SA733(P.K)	"		1
X10~12	2SC945(P.K)	"		3
X14,15	2SC945(P.K.Q)	"		2
IC1	VC1029	IC		1
IC2	MSL9348	"		1
XTAL	M40455	X'TAL		1
	M30997A	Bearing Holder Ass'y		1
	M30998A	Yoke Plate Ass'y		1
	MC951A	Motor Ass'y		1

Other P.W. Board Parts

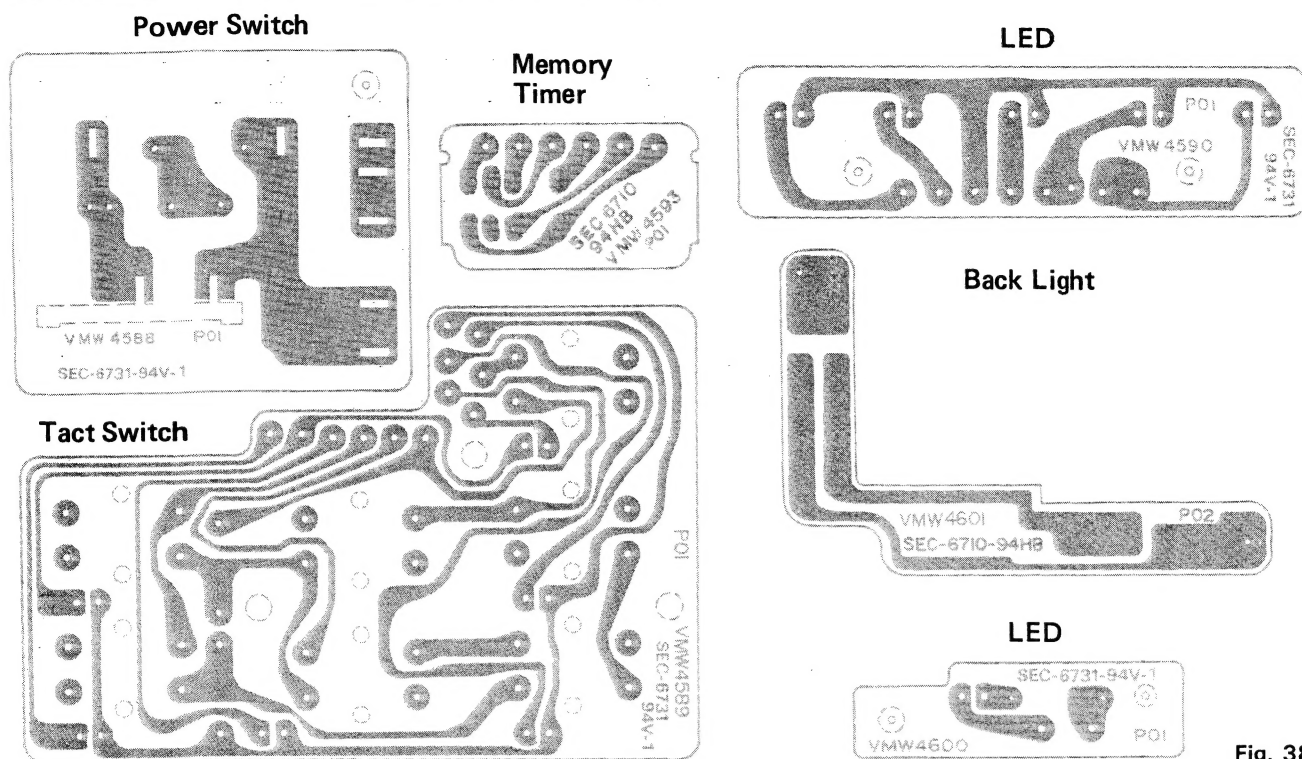


Fig. 38

△ parts are safety assurance parts.

When replacing those parts, make sure to use the specified one.

Other P.W. Board Parts List

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
(Back light)	VMW4601-001	P.W. Board		1
	LD-702	L.E.D		1
(Power Switch)	VMW4588-001	P.W. Board		1
	△ QSP1110-305BS	Push Switch	DD-7B	1
	△ QSP1110-305	"	DD-7A/E	1
	△ QSP1110-308	"	DD-7C/J	1
	△ QSP1110-306	"	DD-7U	1
	△ QFZ9010-103	C. Capacitor	DD-7A/B/E	1
	△ QCZ9014-103	"	DD-7C/J	1
	△ QCZ9015-103	"	DD-7U	1
	△ QRD149J-820S	C. Resistor	82Ω	1
	△ E40130-001	Tab	1/4W	3
(Timer Switch)	VMW4593-001	P.W. Board		1
	QSS2301-102	Slide Switch		1
(Memory Switch)	VMW4593-001	P.W. Board		1
	QSS2301-102	Slide Switch		1
(Tact Switch)	QSP0021-002A	Tack Switch		7
	SLP-155B-01V	LED		2
	SLP-255B-01V	"		4
	QRD147J-471S	C. Resistor	470Ω	1
	QRD147J-391S	C. Resistor	390Ω	2
(LED)	VMW4600-001	P.W. Board		1
	QRD147J-560S	C. Resistor	56Ω	1
	SLP-255B-01V	LED	1/4W	1
(LED)	VMW4590-001	P.W. Board		1
	SLP-255B-01V	LED		5
	VKS4006-001	CANOE Clip		1

Packing

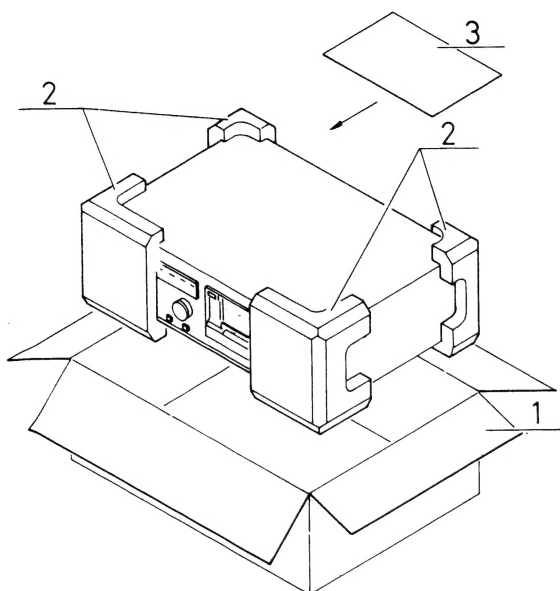


Fig. 39

Position of controls and switch knobs at renew packing.

Power switch	: OFF
Timer switch	: OFF
Auto Rew switch	: OFF
Output level control	: MAX
Input level control	: MIN
ANRS switch	: OFF
Tape select switch	: SF/NORM
REC EQ	: center
Monitor	: SOURCE
Meter	: VU
Counter	: 000
Mecha operation buttons	: OFF

Packing Material Parts List

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
1~2	VDP2075-002A	Packing Case Ass'y	DD-7A/B/E/J/U	1 set
1~2	VDP2075-003A	"	DD-7C	1 set
1	VPD2075-J02	Case	DD-7A/B/E/J/U	1
1	VPD2075-J03	Case	DD-7C	1
2	VPH3114-001	Cushion	Left	1
	VPH3115-001	Cushion	Right	1
	QPGA050-06005	Envelope	for Cassette Deck	1
	AP4056A-036	"	for Power Cord and Provided Cord	2
3	AP4056B-077	Sheet	for Instruction Book	1
	TKS000501-08		for Cassette Deck	1

Sticker

Parts No.	Parts Name	Remarks	Q'ty
VNF0070-001	Feature Sticker	DD-7A/C/J/U	1
VNF0070-002	"	DD-7B/E	1
VND4042-001	Caution Sticker	Timer Safety Lock Caution	1

Accessories

Parts No.	Parts Name	Remarks	Q'ty
VMPO002-00B	Pin Cord		2
VYA4001-00A	Head Cleaning Stick		1
VNNO070-901	Instruction Book	DD-7A/C/J/U	1
VNNO070-301	Instruction Book	DD-7B/E	1
VND4016-001	Metal Sticker		1
BT20029B	Warranty Card	DD-7A	1
VND4013-001	Warning Label	for Disconnection DD-7A/B/E	1
BT20013C	Guarantee Certificate	DD-7B	1
TJLOO0443-01	Seal	Made in Japan DD-7B	
QZL1002-003BS	Warning Label	for 2 Pin Power Cord DD-7B	1
T46328-003	Caution Label	for V. Selector DD-7B	1
VNC5004-001	Mark Sticker	DIN45500 DD-7B/E	1
BXN750110UU	JVC Microphone Guide	DD-7B/E	1
BT20025D	Warranty Card	DD-7C	1
TLT000505-01	UL/CSA Caution Label	DD-7C/J	2
T46328-004	Caution Label	for V. Selector	1
BT20032B	Warranty Card	DD-7J	1
BT20042	Special Reply Card	DD-7J/U. for PX, EES	1
BT20044B	Safety Instruction	DD-7J	1
BT20032B	Warranty Card	for PX, EES, DD-7U	1
E7795-1	EP Mark	" DD-7U	1
VNC5311-101	Caution Card	for EES, DD-7U	1
VO4062-001	Siemens Plug	DD-7U	1
T46328-001	Caution Label	DD-7U	1



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